

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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LONDON, SATURDAY, APRIL 25, 1868.

{ STAMPED .. SIXPENCE.
{ UNSTAMPED, FIVEPENCE.

SOUTH WALES INSTITUTE OF ENGINEERS.

The general meeting of the members of the South Wales Institute of Engineers was held at the Town Hall, Cardiff, on Wednesday last. In the unavoidable absence of the President (Mr. R. Beddington), Mr. A. BASSETT, M.L.C.E., took the chair.

Among those present we observed—Mr. L. Brough, Government Inspector of Mines; Mr. G. Martin, Dowlais; Mr. Adams, C.E., Cardiff; Mr. Brown, Mountain Ash; Mr. J. T. Thomas, Warner's Hill, Coleford; Mr. Cox, Caerleon; Mr. Bridgen, Dowlais; Mr. Llewellyn Llewellyn, Abercarn; Mr. T. Dyne Steel, Newport; Mr. R. A. Auger, Pontypridd; Mr. J. T. Wightman, Blaendare, Pontypool; Mr. Christopher James, Mountain Ash; Mr. E. Richards, Ebbw Vale; Mr. Carbutt, Bradford; Mr. H. W. Lewis, Plymouth Works; Mr. L. T. Lewis, Aberdare; Mr. George Wilkinson, Aberdare; Mr. Daniel Rees, Lletty Shenkin; Mr. John Trotter, Newnham; Mr. Charles J. N. Grey, Mountain Ash; Mr. D. Davies, Crumlin; Mr. J. Ellis, Blaenavon; Mr. Rhys, Hirwain; Mr. Lewis Richards, Dowlais; Mr. J. P. Rowe, Bridgend; Mr. George May, Neath; Mr. D. Thomas, Cwmavon; Mr. T. Wood, Maidee; Mr. J. Forster Brown, Llantrissant; Mr. Luckes, Forest of Dean Works; Mr. Scott Russell, Cardiff, &c.

Mr. D. Davies, of Crumlin, exhibited a model, and several diagrams, of his self-acting steam-striker. Mr. W. Jones, engineer, Cardiff, exhibited a very pretty model of a screw steamer, also two new steam-boilers for deep and shallow vessels, a new kind of keel for iron vessels, and a paddle-wheel with stationary floats, to avoid lifting back water. A number of blocks of patent fuel were exhibited by Mr. Bassett, several of which had been exposed to the sun, frost, wind, and rain in the most exposed position since the first of January last, the whole of which were in perfect condition, as also several that had been immersed in water for 400 hours.

The CHAIRMAN, in opening the day's proceedings, said he was sure they would all sympathise with him in the reason that prevented their worthy President being present at the meeting that day. He had very recently lost his wife, and as a matter of course it was quite impossible for him to be with them on that day, and they had to express their regret at the loss which had prevented his occupying his position as President of that Institute. In committee they had expressed their sincere regret, and he was quite certain that that sentiment would be readily endorsed by every member of the Institute present. He had been requested to take the chair on the present occasion, and he did so with pleasure, and would endeavour to discharge the duties to the satisfaction of the members present. (Hear, hear.) The first business would be to read the minutes of the last meeting.

The SECRETARY (Mr. Bridgen) having read the minutes, which were confirmed, the following gentlemen were declared to have been unanimously elected members of the Institute:—Mr. George Elliott, colliery proprietor, Houghton Hall, Durham; Mr. Evan Lewis, colliery proprietor, Tydraw, Aberdare; Mr. E. P. Bidder, mining engineer, Aberdare; Mr. Frederick Wilmer, mining engineer, Aberdare; Mr. F. C. Winby, engineer, Cardiff; Mr. David Morgan, mineral agent, Mountain Ash; Mr. Thomas D. Jones, mining engineer, Llantrissant; Mr. Charles L. Hunter, engineer, Tredegar Ironworks; and Mr. B. T. Fisher, locomotive superintendent, Sirhowy Railway.

The CHAIRMAN said at the council meeting, held that morning, it had been resolved to reprint the list of members, there being some inaccuracies in the one just issued, and, therefore, those gentlemen who intended to bind their copies of the proceedings, would, perhaps, kindly wait until the amended list was ready. It had also been decided that in future the papers should be read first, and discussed afterwards. Many gentlemen had attended the meetings on several occasions, and they had remained until the close without having their papers read, which was, probably, a great disappointment to them. Their first business that day would be to discuss Mr. Cope Pearce's paper "On Mechanical Ventilation," but he was sorry to say that they had appointed the wrong day for holding their meeting, as there were great rejoicings at Cyfarthfa, in consequence of Mr. Crawshaw's son having come of age, and Mr. Cope Pearce and several others were prevented from being present. He would suggest, therefore, that they should discuss the subject, and then adjourn it till the next meeting. Mr. Pearce had, indeed, expressed a wish that the discussion of the subject should be postponed, as he hoped at the next meeting to be present, and say something upon the subject. They would, therefore, commence the discussion, and after gentlemen present had said what they wished, they would adjourn the discussion of the question. He concluded his observations by calling upon Mr. Lionel Brough to commence the discussion on—

MECHANICAL VENTILATION.

Mr. LIONEL BROUGH said that they all knew for many years past that eminent men had come to the conclusion that in deep mines, and with pits enough to dedicate one especially and entirely to the furnace, and if there was abundant power in that furnace, no ventilation went so sweetly and was so easily managed, or produced a greater quantity of air with a given power, than the furnace itself. But the experience of many years has taught us that in deep collieries we cannot always spare a pit for furnace ventilation, and for that alone; it would, perhaps, entail a cost of 20,000*l.* to sink another deep one, sometimes 60,000*l.* or even 70,000*l.* It would be almost cruel to deprive a man of the capital required to do this for furnace ventilation if the cost, or part of it, could be avoided by the application of a machine. It had, therefore, occurred to the minds of able mechanical engineers, during a period of 25 years past, to avail themselves of the use of machinery without the aid of a hot column; and it had been found that comfort, and often a saving of capital, were secured by machine ventilation. Whether furnace or machine is the best is not really the question now before us, because the use of each or either method depends on circumstances that cannot be controlled. Although the furnace is so deservedly appreciated, there are to be met with at times conditions that almost entirely preclude its adoption, and then we are enabled to fall back on some of the present known machines. Mr. Struvé's cylinders have been in use for some years, and although complicated, they still show that machinery can in some cases produce a certain amount of ventilation. But something less cumbersome was wanted, and this desideratum is found in the fan. The "Struvé" is complicated, and possesses a great number of valves and

points of friction. What was wanted was a machine that would do away with all those contrivances for opening and shutting, and so avoid the danger of leakage and liability to derangement. Certainly, the fan appears to be the simplest of all machines in its action. Reciprocating motion in vessels or chambers, either round or square, incurs the necessity of increased power if worked with tight pistons; whilst, on the other hand, loose pistons with free play are always accompanied by a slip, or loss, or leakage of wind. Then, it was discovered that in the fan, whose motion was rotary and continuous—never ceasing but in case of accident—the action would be simpler, whilst the cost of the original construction would, probably, be less than with any other class of machine. And thus we have the Guibal fan, or the Llanelli fan, each of which is capable of exhibiting a considerable water-gauge. But it must not be forgotten that there is another remarkable machine—the "Lemelle,"—which has great exhausting powers, and possibly may be able to show a higher water-gauge than almost any other. There is a visitor now in this room who has invented still another ventilating machine, said to be capable of getting a great hold or grasp on the air, but as he is about to protect it with a patent it does not become me to say more on the subject until it is legally ensured in the manner stated. The fan appears latterly—say, within the last five or six years—to be considerably in vogue in Wales and also in the North of England; it seems to be attended with good results, and the time will probably come when there will be a great increase of machine-power throughout the kingdom for the ventilation of mines. But, now, referring again to the water-gauge, I have something to say which not only affects our professional practice, but which may have to do with the official capacity of the Inspector. We have been told that in Belgium, where machine ventilation prevails, the wind-ways are apt to get contracted, to be neglected in fact, to get out of repair, and thereby entail on the pit's company—that is to say, the men and on the horses—considerable discomfort, and, in fact, the cause or source of want of health and of freedom of action. But in Great Britain, if we use machinery extensively, that is no reason why we should allow the wind-ways to fall into decay. Men boast that they can get 7, 8, or 9 in. of water-gauge; that proves that a powerful machine lays hold of the wind in a manner that no furnace can approach, but that is no reason why wind-roads shall be neglected, danger brought about, and ultimate loss entailed. These observations are made in order to remember that we prize the machines in proportion to the amount of water-gauge they are capable of exhibiting, whether at the bottom of the pit or at the surface, but we should never forget to remove the obstructions that produce this great height of gauge. I have seen a machine working with only 1½ in. of water-gauge, but then the pit had magnificent returns. This is far better than boasting of 7 in. of water-gauge. If by the enlargement of the openings underground we can reduce the height of the column of water to 1½ in. or 1½ in. that will be a strong proof that everything is right below, and that all the wind-ways have the sectional area that every pit ought to possess. Mr. Brough then said that, having made these remarks, he had much pleasure in seconding the adjournment of the discussion.

Mr. J. T. THOMAS wished to know if there were any model of the ventilation they had been discussing?

The CHAIRMAN said Mr. Cope Pearce was going to bring some, but, as he had previously stated, that gentleman was unable to be present, owing to the rejoicing at Cyfarthfa.

Mr. THOMAS said he was in the dark with what they were going to discuss. It was a subject in which they were deeply interested.

The CHAIRMAN: Then I hope you will be present at the next meeting, when you and others who attend will see the models.

Mr. WILKINSON, of Duffryn, said they had not yet made any experiment with the fan, in consequence of their not having quite completed their plans. They had a wooden top to their pit, and so far as they had gone the plan had been very successful, and he could get as much wind-ways again as he could formerly.

Mr. G. BROWN said it might cause some surprise that he had turned from furnace ventilation to be an advocate for mechanical ventilation, but he had seen danger arising from furnace ventilation. What he wanted was to get a fan which would give him 120,000 cubic feet per minute. He advocated a fan with rotatory motion, without which he thought it was deficient, on account of the extra turns it took, the furnace having a reciprocating motion; and he said Mr. Nixon was engaged in studying a ventilation which probably he should soon be able to apply.—Mr. LEWIS said he had made some experiments with Mr. Bates, but he would leave it until their next meeting.

The discussion was then adjourned.

PATENT FUEL—UTILISATION OF SMALL COAL.

BY MR. A. BASSETT, OF CARDIFF.

This was a very interesting paper, in which the facility for using small coal, especially when prepared according to the patent of Mr. D. Barker, whose invention is being developed by the London Patent Coal Company, was carefully pointed out. In 1861 Mr. Bassett had stated, as the results of various investigations he had made over extensive areas of exhausted coal fields, and although in some cases, either from the character of the seam of coal, or from the mode adopted in working, a less percentage of coal is lost than in the cases then quoted—30, 34, and 39 per cent.—still, under the most approved system, the quantity of small coal left in the mines, and, consequently, for ever lost, bears a very large proportion to that raised, and which would all be brought to bank if a market were obtained for it. The subject having occupied Mr. Bassett's attention for many years, he has had before him various suggestions for making patent fuel, and he believes that the process now under consideration will be found not only the most economical, but it can be proved that the fuel is quite equal to the large coal.

In order that the merits of Mr. D. Barker's invention might be thoroughly ascertained, Mr. Bassett having undertaken to act as the representative of the company for the introduction of the patent fuel to the South Wales and Somersetshire districts, manufactured by hand at the Risca Colliery, in February last, about 30 tons of fuel from the Black Vein Seam of coal, the machinery and drying-rooms in connection with the brick-works at the colliery having been placed at his disposal for that purpose. The fuel was then tested against the large coal from the same seam, with the assistance of Mr. Laybourne, the locomotive superintendent of the Monmouthshire Railway. They first ascertained the duty that was obtained by a locomotive with the large coal, and then with the fuel.

In the last day of trial the quantity of fuel used per train mile was 33 lbs. less than when coal was used, although the average load was increased by 72 tons, proving the superior duty obtained from the fuel. This, no doubt, arises from the fact that in using the fuel there was an almost entire absence of small. It was found that the fuel requires under the boiler no stoking, and that a very marked increase in the duty was obtained when the blocks, which weighed about 8 lbs. each, were broken before being used. They also found that the smoke produced from this fuel was not so dark as that produced from the coal, but presented a very light-brown appearance.

With regard to the mode of manufacture adopted by Mr. Bassett it was at once

simple and efficient. The small coal was tipped from the wagons into a chamber, the bottom of which falls towards the centre, so that the coal finds its way by its own gravity into a disintegrator, which at once reduces it to one uniform size; it is then taken up by an elevator and deposited into a hopper; it then enters a pug-mill, at the top of which arrangements are made for a continuous and regular supply of the mucilage, the mixing of which will be accomplished by very simple mechanical means. The mucilage is composed of about 8 lbs. of farina, and from ½ oz. to 1 oz. of carbolic acid. The farina is first mixed with a small quantity of cold water, afterwards about 20 to 25 gallons of boiling water is rapidly admitted into the tank; the carbolic acid is then added. The resulting mixture is, therefore, only a paste or liquid glue, and it has the advantage that it introduces into the manufactured fuel no non-combustible substance, that the tenacity of the fuel being increased by heat the crumbling of the fuel in the fire is avoided, and that there is not the slightest offensive smell from the adhesive compound in combustion. The material is pugged, and is then in a condition for moulding by the machine, which is placed immediately beneath the pug-mill. The blocks of fuel are received from the moulding-machine on trays, and placed on skeleton trucks, which are at once arranged in front of the drying-ovens. With a temperature of from 250° to 300° the blocks will be thoroughly dried in from 9 to 12 hours.

It has been supposed that the cost of working drying chambers of this character will involve considerable expense, but this is not the case, for at Aberaman Ironworks the average quantity of coal used over a period of three days and three nights was at the rate of 600 lbs. per 24 hours; this quantity was sufficient to heat a chamber 28 ft. in length, 12 ft. 4 in. in width, and 7 ft. in height, without any flues either under the floor or along the sides, and where a temperature of from 250° to 300° was maintained by a fire from the outside, the flame passing in at one end of the room. It is, therefore, as Mr. Bassett thinks, quite clear that by a proper distribution of heat, effected by means of well-constructed flues, a temperature of upwards of 300° would be maintained within the same area by the consumption of about one-half the quantity of coal used at Aberaman; consequently, for chambers of sufficient capacity to dry 100 tons per 24 hours, the fuel required would not exceed 1½ or 2 tons per day of 24 hours.

Mr. Bassett is of opinion that the cost of erecting works of sufficient size for manufacturing 100 tons of fuel per day, with the requisite machinery, will be from 3000*l.* to 3500*l.* He also estimates that the cost of manufacture will not exceed 1*s.* per ton. In arriving at this amount he has assumed that a staff of 38 hands will be required; but as the work is generally of a light character, a large proportion of the hands employed will be lads. He estimates the value of the labour per day at 8*s.* 6*d.*, or 10½*d.* per ton, assuming 100 tons per day to be made. The average cost of the mucilage and acid may be estimated at from 1*s.* to 1*s.* 2*d.* per ton. This, added to the cost of labour, will make (say) 2*s.* per ton as the cost of manufacturing the fuel, and putting it either into wagons at the works or stacking ready for sale. But in order to guard against any contingencies that may arise, and which may not have been taken into consideration in his estimate, he states that 2*s.* 6*d.* per ton ought to cover every possible expense except the charge for royalty on patent right. He had found the brick-making machinery constructed by Messrs. Clayton, and by Messrs. Whitehead, turned out sound and solid blocks of coal, and he had been informed by Mr. Adams, of Cardiff, that the washing machine of Mr. E. Edwards could be cheaply and economically used for cleansing the coal previously to making it up into fuel. Mr. Bassett's experiments were highly satisfactory, and from them he considers there will be no difficulty in arriving at a practical solution of this important question.

The CHAIRMAN said their next subject was the discussion on the paper (of which the above is an abstract) which they had before them, by himself, on Patent Fuel, and he would be very happy to answer any question put to him in the best way he could.

Mr. LIONEL BROUGH said he did not see why they could not manufacture it as well in this country as they did in France and Belgium, and if Mr. Bassett's plan was on the system he had seen in Somersetshire he must say that it struck him that it was the best in the country.

Mr. BASSETT explained the process of manufacture of the blocks of fuel he had produced as specimens, some of which were made by hand, others by machinery.

Mr. STEEL asked which was the cheapest mode of making it?—Mr. BASSETT said that the cost of one of the machines would amount to the sum of 700*l.*, and another would perhaps cost 350*l.* He might, however, state that since his paper was written he had had an opportunity of going more fully into the subject, and he had made as nice a calculation as he could as to the cost of making fuel. He found, if machinery were put up capable of making 10 tons per hour, or 100 tons per day, the total cost of labour of this would be 5*l.* 9*s.* 3*d.*, or equal to 1*s.* 1*d.* per ton. Then, if they took into account the wear and tear of the machinery required for this manufacture, 10 per cent. of wear, tear, bad debts, rent, taxes, &c., it would cost 9*d.* per ton additional. The cost of mucilage, if obtained from potatoes (and potatoes were best), would be another 1*s.* 3*d.*, making a total cost of 3*s.* 1*d.* per ton. In addition to this there would be 6*d.* per ton for royalty, making the entire cost 3*s.* 7*d.* per ton. Of course, they must add the value of the coal, which he could not include in an estimate, because it varied in different localities, but which might be put down at from 4*s.* to 5*s.* per ton; and this was the total cost at which fuel could be manufactured and placed in the yard for hauling away. He had also made an estimate for the manufacture of 50 tons a day, and if the machinery erected was only capable of making that quantity the cost would be a little more. The labour would be 1*s.* 4½*d.* per ton; wear and tear, &c., 1*s.*; mucilage, 1*s.* 3*d.*; and royalty, 6*d.*; making 4*s.* 1½*d.* The cost for machinery, the press, engine-house, stacks, boiler, ranging stoves, &c., would cost 886*l.*; drying stoves, 830*l.* Mr. Neville's machine, such as was erected at Swansea and Cardiff, 1860*l.*; 100 iron wagons, 700*l.*; making a total of 4276*l.* But if they used Mr. Barker's machine the estimate would be reduced 350*l.* The machinery that had been put up in the Forest of Dean he was not prepared to say anything about. He then explained the different blocks of fuel in the room, which had been sent down from Northfleet, Kent, having been previously dipped in cold tar oil. After they had been received they had been placed in cold water, and in 14 days they absorbed 13 ozs., but the edges had been broken in transit, consequently they absorbed a considerable quantity more of water than they otherwise would have done.

Mr. COX said Mr. Bassett had not included in his calculations the cost of washing the coal. He presumed that Mr. Bassett did not conclude that the fuel could be made from coal unwashed.

Mr. BASSETT said he had not included the cost of washing the coal in his estimate. There was no doubt a lot of the small coal would want washing, and the fuel could not be made from it without its being washed.—Mr. COX said, so far as his experience went, the cost for washing would be about 1*s.* per ton, allowing 15 per cent. for waste.—Mr. BASSETT said his paper was "On Patent Fuel," and not on coal washing; but Mr. Cox's remark was a very important one.

Mr. ADAMS said Mr. Cox did not mean the cost of labour for washing would be 1*s.* per ton.—Mr. COX said he did not; he estimated the labour at 4*d.* per ton, and the loss at 15 per cent.

Mr. THOMAS asked if the coal was washed that the bricks shown were made with?—Mr. BASSETT said it was not.

Mr. THOMAS: Then you will be able to tell us the cost of the coal?—Mr. BASSETT: No; I cannot.—A VOICE: 10*s.* per yard.

Mr. THOMAS: There is a lot of coal in the Forest of Dean that would not want washing, therefore it would be more valuable for that purpose?—Mr. BASSETT: Yes; it would.

Mr. LUCKES, from the Forest of Dean Works, alluded to the manufacture of fuel bricks at his establishment by a machine, the invention of Mr. Haywood, of Gloucester, and manufactured by the Uskside Company, at Newport, in a very satisfactory manner. The blocks of fuel were dipped into petroleum, and a large quantity absorbed. The block was then made waterproof, and a lighted candle could be passed over it without its becoming ignited; but the block, when broken, ignited immediately, and burnt with great brilliancy. He thought this would form a most important addition to the fuel employed for marine engines, provided means could be adopted for stowing it in safety.

Mr. ADAMS promised to lay before the next meeting some statistics respecting the cost of the manufacture of the fuel, together with the cost of washing the coal.

Mr. MARTIN said he would lay before the next meeting the cost of washing the small coal, but he was not then prepared, as the machinery at Dowlaish had only been lately erected.

Mr. BROUGH said if they could not wash it for 4d. per ton it was not worth doing.

Mr. COX said the cost of washing was said by him to be 4d., but that did not include the loss of 15 per cent.

Mr. BASSETT said the fuel produced was sold at 1d. per block, which amounted to from 25s. to 30s. per ton.

Mr. LUCKES said he would lay before the next meeting the cost of manufacturing the fuel in the Forest of Dean.

The subject dropped, and an adjournment took place for luncheon. Papers were afterwards read as follows:—"On Davies's Self-Acting Steam Striker," by Mr. D. Davies, Crumlin; "On Over-Winding, and How to Prevent It," by Mr. W. Fairley, Loughor; "On the Assurance of the Lives of Miners and Colliers," by Mr. Christopher James, Mountain Ash. The reading the papers, which will be laid before the next meeting, brought the business to a close.

The members afterwards dined together at the Royal Hotel, where a splendid repast was provided, and with which all present expressed themselves highly satisfied. Mr. Bassett presided, and after the cloth had been removed, the usual loyal and complimentary toast were given and responded to.

DEVON AND CORNWALL MINERS' ASSOCIATION.

The Miners' Association for Cornwall and Devonshire held its seventh annual meeting on Monday, at the Public Rooms, Redruth, Mr. J. ST. AUBYN, M.P., in the chair. Among those present were the Rev. S. Rogers, Messrs. J. K. Cartwright, W. Pike, W. M. Grylls, S. Higgins, jun., T. Thompson, W. Argall, G. M. Healy, W. Tyacke, F. Oats, A. Ridington, and J. Endry.

The CHAIRMAN, in consideration of this being a meeting strictly for business purposes, would not detain the meeting with a speech.

The Rev. S. ROGERS read the report of the council. It commenced by regretting the removal by death of two of the earliest supporters of the society, Sir C. Lemon and Capt. C. Thomas, to whose families tribute was paid. The report went on to say that Dr. Foster most ably conducted the classes of the Association at St. Just, Camborne, and St. Breage, until January last, when he accepted an engagement under the Viceroy of Egypt, and the Association has thereby lost his valuable services. The council recommends for election Mr. Collins, who has secured for himself the most honourable position in the examinations of the Departments of Science and Art, the certificate of which he holds, and they do so believing that in him they have found a teacher in those qualifications which particularly fit him for an instructor to such young men as join the Association classes. Since Dr. Foster resigned his office the classes at St. Just, Camborne, and Breage have been continued under the care of Mr. F. Oats and Mr. W. Tyacke, both of whom have been students in the Association classes. The numbers of young men attending the classes had been only slightly reduced since Dr. Foster left, but in spite of the great depression in mining, the average regularity of attendance has slightly improved, and a considerable number of them will, we hope, present themselves at the Government examinations of next month. Referring to the report of the council at the annual meeting held at Falmouth, the council could not but congratulate the association on the list of those members of the classes who passed the examinations of the Departments of Science and Art, and that one of that number distinguished himself by carrying off from all England the gold medal in mineralogy. A commencement has been made in the formation of local collections of characteristic examples of metalliferous ores, and believing it to be of great use the efforts of the council will be directed to the extension and improvement of such collections. The association feels that it is only by improving by the aids of science all our mining operations that we can expect to compete with foreign mines. Mr. Rogers mentioned that last year 25 candidates presented themselves for examination, while he hoped there would be 32 this year. In 1866 the number was 12. He moved the adoption of the report, which was seconded by Mr. Pike and carried.

Mr. PIKE read the financial statement, from which it appears that there had been a balance of 45s. at the end of 1866 against the association. The expenditure, including the payment of several arrears, during 1867 had amounted to 238s. The receipts during the same period had been 249s., including subscriptions 190s., arrears of subscriptions, 30s.; leaving a balance to the credit of the association of 12s. 9d.—This report was also adopted.

The next business being the election of three vice-presidents. In the place of Sir Chas. Lemon, deceased, Messrs. N. Kendall, M.P., and T. S. Bolitho, retiring by rotation, Mr. W. M. GRYLLS proposed the election of Mr. R. W. Fox, of Falmouth; Major Bickford, of Tuckingmill; and the Rev. S. Rogers, of Gwennap. He referred to the warm interest in the miner and in the Miners' Association felt by Mr. Rogers, to whom the association was deeply indebted.—Mr. Higgins, jun., seconded the motion, which was carried.

Four members of the Executive Council were then elected in the place of Capt. Charles Thomas, deceased; Mr. M. Pearce; Mr. R. W. Fox, just made a vice-president; and Mr. J. Matthews.

On the motion of Mr. CARTWRIGHT, seconded by Mr. PIKE, Messrs. J. Thompson, of Penzance; P. P. Smith and J. Roberts, of Truro; and G. Noakes, of Great Wheal Vor, were elected.

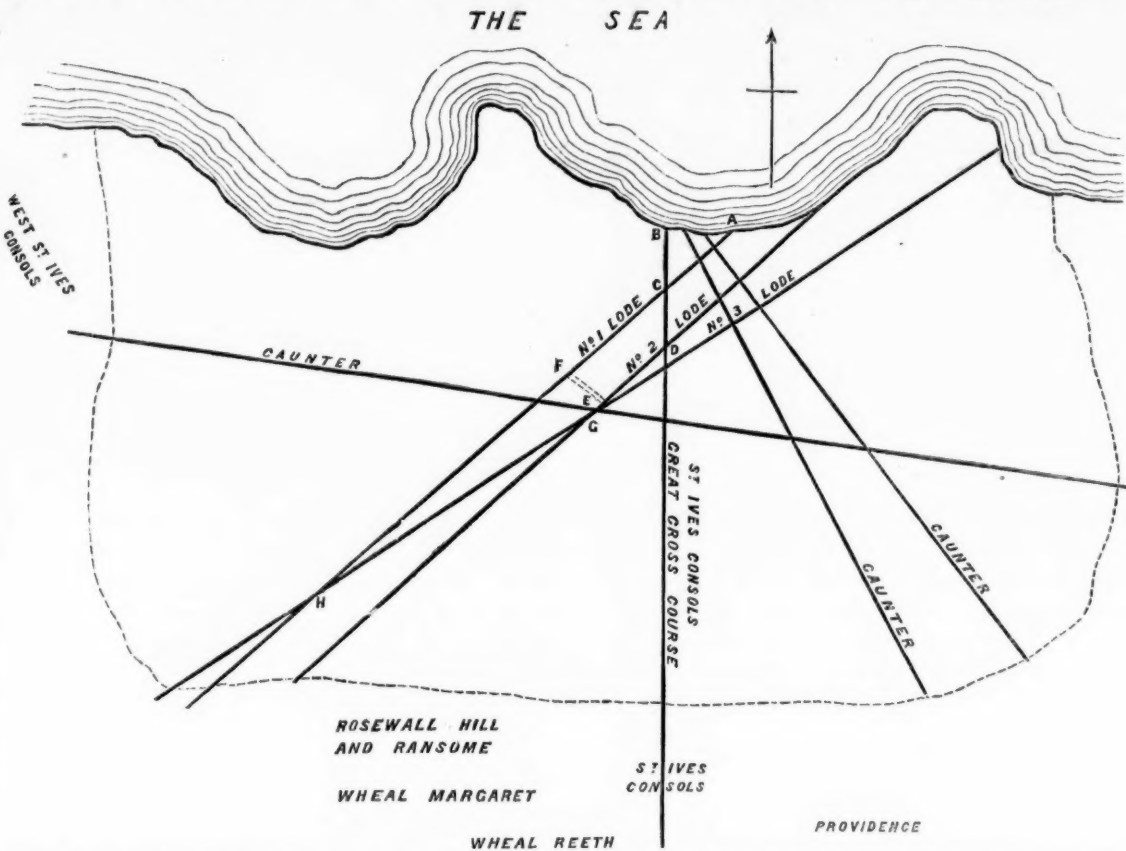
The meeting then proceeded to the election of a lecturer in the place of Dr. C. Le Neve Foster, resigned. There were two applications, by Mr. Brown and Mr. Collins, both of whom were stated to be highly qualified.—The Rev. S. ROGERS said that Mr. Hunt had seen both the candidates, and from what he said the council had no hesitation in proposing Mr. Collins for election. His qualifications were these:—In mineralogy he had taken a third-class year two ago, and was now about equal to a first-class; in organic chemistry he held a second teacher's certificate; he had a silver medal in geology; in electricity he took a first-class in 1865; in heat and light a first in 1867; and in practical geometry a second in 1867. He therefore proposed Mr. Collins for the office of lecturer at the previous salary of 100s. a year, on condition that to his other duties he added that of collecting subscriptions.—Mr. W. M. GRYLLS seconded the motion, which after some discussion was carried.

At the suggestion of Mr. GRYLLS, and the invitation of the CHAIRMAN, Messrs. Argall and Tyacke consented to attend the next meeting of the executive council, and there express their views on the subject in the way in which the education of the classes should be carried on.—Western Morning News.

"RAILWAYS AND THE PUBLIC."—In a pamphlet (issued through Messrs. Bell and Daldy, York-street, Covent Garden), entitled "How to Make Railways Remunerative to the Shareholders, Beneficial to the Public, and Profitable to the State," Mr. RAPHAEL BRANDON seeks to show that the public have not yet obtained the full benefits to be derived from railway travelling, as well as that the shareholders might reap advantages in proportion to those conferred upon the public by the adoption of a better system. These desiderata, it appears to the author, can only be accomplished by the Government taking up all the railways in the kingdom. He estimates that the average profits of the British railways are 4-2-6ths per cent., and suggests that railway shares should be exchanged for Government railway stock, bearing 4-2-6ths per cent. guaranteed interest, the price at which to convert the shares being the average price for the past seven years. Government is to unite the whole of the railways under one general management, so that they should become a recognised branch of the public service available for all distance in one given direction for rail, third-class, 6d. second-class, and 1s. first-class; and estimates that at that rate six times the number of passengers would be carried, and that there would be a very small, if any, additional expense. He calculates that 755,879,586 passengers would travel annually with single-journey tickets; of these one-seventh would be first-class, two-sevenths second-class, and four-sevenths third-class, and would yield an income of 16,197,419s.; and that 755,879,586 passengers would travel with season tickets, which he proposes to issue at 25s. first-class, and 15s. second-class, such tickets giving the holders the privilege of travelling any distance in any direction, in carriages provided expressly for their use; these are to give an income amounting to 19,031,765s. The fares for single journeys are to be paid by Government stamps, which are to be issued like postage stamps, and delivered up on the completion of the journey; a passenger not provided with a ticket to pay double fare. Mr. Brandon regards his scheme as the completion of the postal system, and refers to the advantages already derived from the letter, book, and sample post, and to be anticipated from the annexation of the telegraph, as evidence of the benefits derivable from the development of his project.

PREFERENTIAL SHAREHOLDERS.—Where there is a surplus of capital on the winding-up of a company, preferential shareholders are not, without special agreement, entitled to a preferential share in the division of the assets. Vice-Chancellor Malins thus held, in the London India-Rubber Company (Limited), the question being whether the right of shareholders to a preferential dividend carried with it a right to a preferential payment of capital where there was a surplus under a winding-up. The Vice-Chancellor said he should have been glad, on principle of justice, if he could have ordered the surplus assets among the preference shareholders (who had found all the capital in this company), and could have excluded the patentees, who had drawn the shareholders into so unfortunate a speculation; but the agreement made no provision whatever for the rights of the different classes of shareholders under a winding-up. If dividends had ever been declared, the preference shareholders must have had the arrears of their dividends paid before the other shareholders received anything, but no dividend had ever been declared.

THE WEST ST. IVES TIN AND COPPER MINE.



One of the largest shareholders in the above mine, upon seeing the full account given in it in the Supplement to the Mining Journal of April 11 (p. 280), showing the richness of the district in which the mine is situated, the indications and evidences it already gives of mineral wealth, the very trifling cost at which it is being worked, and the large profits which have been derived from the neighbouring mines, sent his own agent to examine and report upon it, and the above plan and following statement were the result of this inspection.

"An adit level, taken up at high-water mark, has been extended on No. 1 lode about 40 fathoms, up to the St. Ives Consols great cross-course, which crops out, and is seen in the face of the cliff. At the point of intersection (C) this cross-course is embedded in a most beautiful stratum of ground, which, from its general appearance, will continue both south and west of the present drive, and in which, according to all analogy, the lodes cannot fail to yield large quantities of mineral. No. 1 lode has been heaved a little to the left by the cross-course, and the men are now driving south to trace it out on the western side thereof. This drive will also be continued about 15 fathoms further south to cut No. 2 lode, which may be done expeditiously, and at a very small outlay, as the ground by the side of the great cross-course is soft, and will not cost more than 2s. per fathom to drive. When this point is reached there is every reason to believe you will meet with a good lode of tin, in which case you will have a paying mine at once. By making this drive of sufficient width for a tramroad, and continuing it from C to B (about 12 fathoms), all the deads may be turned over the cliffs into the sea,

and the tinstuff can be wheeled through the adit from C to A, and be taken up to surface by the skip-road, which is already made.

Unless you find No. 1 lode productive when you meet with it on the western side of the cross-course, I would not recommend you to drive on it there, as it is so near the change of ground; but further inland from the face of the cliff, and even at the late drive, under sea level, I have every confidence that it will be found productive. And as I think you can depend upon meeting with a good course of tin at the intersection of No. 2 lode (D), you will, of course, drive thereon, and when you have driven 30 or 40 fathoms on that lode, you can then get at No. 1 lode in more settled ground, by putting out a cross-cut from No. 2 to No. 1, as shown in the above plan (E to F).

No. 3 lode is seen in the face of the cliffs, nearly at the eastern extremity of the sett, and appears to be running oblique to Nos. 1 and 2 lodes, and will form a junction with them to the south-west. This is of great importance, the depth from surface at the points of intersection (G and H) being about 50 fathoms, and looking at the remarkably favourable position and character of this valuable piece of mining ground, and at the great advantage you have of exploring on the whole of the lodes at a trifling cost, by driving on the cross-course, I cannot doubt but that you will soon lay open a good mine, that will reward the adventurers for their outlay."

From the agent's report, given in the Mining Correspondence in this day's Journal, it will be seen that they have cut the east and west lode (No. 1), west of the cross-course, and that it produces both tin and copper, being very productive for copper, and greatly improving as it is opened on.

MINING IN AUSTRALASIA—MONTHLY SUMMARY.

NUGGETS.—At Victoria a nugget has been found by a German at Sandhurst weighing 275 ozs., value about 1000s. At Queensland a nugget containing 900 ozs. of gold was found at Sallor's Gully, Nash's Creek.

On the banks of the River Don, in Tasmania, on the estate of Mr. Raymond, a lode has been discovered, yielding cobalt, silver, copper, and antimony; an analysis, gives the result as—of cobalt, 4 ozs. to the ton; silver, 100 ozs. to the ton; and copper, 14 per cent.

AUSTRALIAN MINES.

YUDANAMUTANA.—The superintendent (March 2) states.—We have sold here during the past month three parcels of rough copper, for neither of which have we yet agreed as to the percentage. In the meantime we have drawn on account 2469s. 2; the account sales shall be forwarded by next mail. About 31 tons of copper are in course of transit to port. Fresh contracts for fuel have been made at old prices. Capt. Terrell reports, under date of Feb. 18.—Wheal Binnman: No. 1 winze is now in the bottom, 18 ft. long by 6 ft. wide, all solid ore; there is no foot or hanging wall; and how big the lode is I cannot tell, but the deeper we go the better it becomes. No. 2 winze remains as good as last month. The stopes in the back of the 10 and 20, south of No. 1 shaft, and also the big bunch, are all looking the same as when last reported. We have raised 273 tons of ore during the month, and made 35 tons 12 cwt. of copper. No. 1 furnace has been out for the last fortnight, and been entirely rebuilt with fire-bricks of our own make, which will stand any fire. The three furnaces will all be in full work next week, and my return of copper next month will, I hope, be exceedingly good. Wood coming in fast, and well supplies three furnaces.

WORTHING.—During February we have cut through the lode at the 83 fathom level. The lode in the south end will yield from 3 to 4 tons of ore per fathom, and has improved, with more ore, and ground easier for driving. In the north end the lode is fully two-thirds ore, and so far as we are into it, it is about 3 feet wide, and opening above both in the foot and hanging walls. It is a very lode of beautiful yellow ore, mixed with quartz; the most of the water is coming away from the bottom. The 73 fm. level is unwatersed as far south as the big bunch, so as to enable us to commence two winzes. In No. 1 winze the lode is 4 feet wide, and will yield 4 tons of ore per fm.—No. 2 Winze: This is going down in the big bunch, and is turning out very rich—10 tons of ore of much beyond our usual quality to the fathom. The benefit of this improvement is being felt in the furnace by the increase of regulus during the last fortnight; but until it is driven through in the 83 we can form no idea of the extent of it. We hope as the slide is some considerable distance south of us there may be a marked improvement. The 63 and south is very much improved since last report, although we cannot make much headway, the ground being hard; yet we hope as the ore makes so the hard ground will cut out and soon become a paying lode. The end is getting much wetter, with more ore, but not yet rich, and the water is gradually draining from the 63. At present the lode is all the size of the end, and beginning to make small vaghs, and letting out water. This is a great feature of the Ironer Mine. Whenever we have a very lode we are almost sure of a good paying one. Quantity of ore raised during the month 200 tons. Copper shipped, 25½ tons. Regulus on hand, 50 tons of 50 per cent. assay. Ore on hand, upwards of 100 tons of 10 per cent. Number of hands employed, 103.

GREAT NORTHERN.—Capt. Tonkin (Feb. 22) reports.—The winze west of cross-cut is not looking so well as when last reported. We met with a slide during the week, which has disordered the lode for the present; it may, however, be for the best when we get under the slide. The lode is much smaller than when last reported, and is composed of carbonates and quartz, with a little gossan and iron; but the stratum of ground near the lode is much stained with carbonate of copper, and much softer for sinking than usual. We are now sinking in new ground, and although at a great distance from the old workings, we may get down on a large deposit of copper at any moment. My faith is unshaken, although the lode is not so good as it was. I believe that we shall open up some good ore ground in sinking this winze.

YORKE PENINSULA.—At the Kurilla Mine, during February, Capt. Anthony had continued the driving on the 35 fathom level, with the view of reaching the point in it where ore was left coming down from the 25 to the 35. He reports:—"The 35, east of Hall's shaft, has been driven during the month 3 fms. 2 ft. 6 in.; for the first 2 fms. the lode was destitute of ore, but during the last fathom or more, quartz, mundle, and copper ore have occurred in small quantities, rendering the lode slightly more promising. The engine works well, and I have no difficulty in keeping the mine properly drained. After a further and better acquaintance with this mine, I see no reason for altering my opinion of its ultimate value if vigorously worked. The chairman of the committee at Adelaide, the Hon. Thomas Elder, had visited the mine in company with Capt. Hancock, of the Moonta Mine, and Capt. Dunstan, of the Wallaroo Mine, and had reported to the committee that he was satisfied with the progress which had already been made." The committee write as follows:—"We have an experienced captain whose reports can be depended on, and we are satisfied that whatever skill and labour can do will be done."

ENGLISH AND AUSTRALIAN.—The quantity of coal at Kooronga was 549 tons; at Kapunda, 174 tons; and at Port Adelaide, 667 tons. There were five furnaces and one refinery at work at Port Adelaide. Since date of last

advice 160 tons of copper had been shipped, and a further 100 tons were ready for shipment.

PORT PHILLIP AND COLONIAL.—The quantity of quartz crushed for January (six weeks) was 6648 tons, yielding 3035 ozs. 11 dwts. of gold, or an average of 9 dwts. 3 grs. per ton. The receipts were 11,161s. 2s. 7d.; payments (including 2737s. 3s. 1d. for firewood and timber), were 8957s. 16s. 8d. Profit 2163s. 6s. 11d., added to which was last month's balance of 2721s. 6s. 10d., leaving an available balance of 4884s. 6s. 9d. The amount divided was 3700s., the Port Phillip Company's share of which is 2405s. The balance of 1184s. 6s. 9d. was carried forward to next month. Three weeks' return for February—Quartz crushed, 3699 tons. Gold obtained (including 91 ozs. from pyrites), 1776 ozs. 9 dwts., or an average per ton of 9 dwts. 14 grs.; remittances, 2481s. 8s. 3d.

SCOTTISH AUSTRALIAN.—The sales of coal from Lambton Colliery during January amounted to 12,618 tons. The assistant superintendent, Mr. M. Young (Feb. 24) writes:—I am of opinion that, taking all things into consideration, we have done very fairly for the portion of this year that has elapsed. We still head the list as regards the quantity of coal shipped.

CADIANGLONG.—There had been shipped to London, per the Globe, 7 tons 1 cwt. 2 grs., and by the William Duthie, 7 tons 0 cwt. 1 qr. 19 lbs. of fine copper. Capt. Holman reports that the bottoms of the furnaces were being taken out and re-smelted, and it was expected the smelting-works would be brought to a close in the course of February last, all mining operations having ceased on the 20th of the preceding month, leaving, however, the whole of the machinery and plant in its place, so that it might be possible to resume work at a future day with little trouble or cost.

FORTUNE COPPER (W.A.).—Mr. Samson (March 2) advises of having shipped, per Hongkong, 82 tons of lead ore, and that the Hastings was engaged to take 200 tons to London. In store, awaiting shipment, 224 tons lead ore and 83 tons copper ore.

EXPORTS OF COAL.—By the Monthly Circular of Messrs. Higginson, Liverpool, we learn that the quantity of coal exported in March was 753,283 tons, against 644,719 tons in the corresponding month of 1867, showing an increase of 108,564 tons. The particulars are:—From the Northern Ports, 406,810 tons; Yorkshire, 33,281 tons; London, 3271 tons; Liverpool, 48,273 tons; Severn Ports, 209,471 tons; and Scotch Ports, 52,177 tons. The increase was—Northern Ports, 89,474 tons; Yorkshire, 5164 tons; Liverpool, 12,512 tons; Severn Ports, 2497 tons. The decrease—London, 289 tons; Scotch Ports, 794 tons. Total, Jan. to March, 1,929,421 tons; corresponding month last year, 1,771,746 tons: showing an increase of 157,675 tons.

TAX ON COAL.—Duties on coal, which are still in favour, were also thought a convenient mode of raising money in bygone times. In the year 1592, when funds were wanted to finish the then newly-constructed castle at Plymouth, W. Borough addressed a paper of considerations to Lord Burghley, in which he proposed a tax of 12d. a chaldron on Newcastle coal brought in there by strangers, which would amount to 600s. a year.

COAL FIELD ON FIRE IN SCOTLAND.—For some considerable time past it has been known that the Balgonie coal field, in the neighbourhood of Thornton Markinch, Fifeshire, has been on fire. Sundry futile attempts have been made to extinguish the burning, which has long been smouldering, and this week it has increased in force, so that the miners have been unable to penetrate to the workings.

PAPERS ON PRACTICAL MINING.—The thoroughly practical character of the papers read at the recent meeting of the Miners' Association of Cornwall and Devonshire will render the detailed report of the meeting particularly acceptable to all engaged in mining operations. The volume contains papers "On Bergstrom's Boring-Machine," now in use at the Altenberg Zinc Mines," by Dr. C. Le Neve Foster; "Remarks on Boring-Machines," by Charles Fox; "On Tunnelling by Machinery," by Gen. Haupt; "On High-Pressure Steam-Boilers," and "On Jordan and Darlington's Hydraulic Mining Machinery," by T. B. Jordan; "On Beaumont and Locock's Tunnelling Machine," by Capt. H. Lock, R.E.; "On the Persberg Iron Mines," by Dr. C. Le Neve Foster; "On an Excursion to the Chilverton District," by Francis Oats; on the same subject, by William Argall; "On Vestiges of Ancient Tin Workings in the Looe Pool Valley," by R. J. Cunneen; "On the Occurrence of Wood Tin at the Great Wheal Vor," by G. M. Henty; "On the Calamine Deposits of Sardinia," by F. G. Davis; "On Hydraulic Apparatus as Motors," and "On Transmitting Motion in Mining Operations," by John Darlington; "On the Boring-Machines exhibited, or described, at Falmouth (a tabulated account thereof)," by Dr. C. Le Neve Foster; "On Brunton's Rock Tunnelling-Machine, by J. D. Brunton; and on the Use of Doering's Boring-Machine at Tincoft Mine," by Dr. C. Le Neve Foster.

The price of the book is 1s., and it will be forwarded from the Mining Journal office on receipt of 13 stamps.

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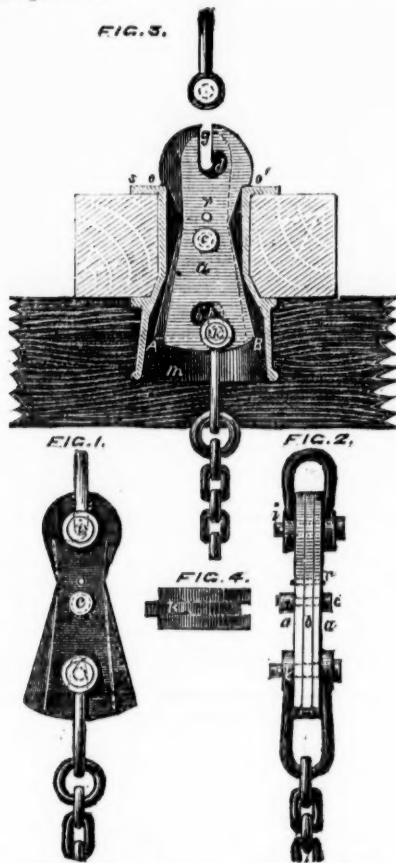
have barman set to work therein. In the lowest level I have just discovered the most beautiful "nail," of exceeding richness. It lies almost entirely outside the

[For remainder of Foreign Mines, see this day's Journal.]

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending April 19 amounted to 10,083*l.* 8*s.* 9*d.*

PREVENTION OF ACCIDENTS FROM OVER-WINDING. ORMEROD'S PATENT SAFETY LINK.

We have from time to time placed before our readers various devices for the prevention of accidents at collieries from over-winding. We have now to draw their attention to a very important improvement in this direction, which has been invented by Mr. EDWARD ORMEROD, the engineer at the Atherton Collieries. Some time since several serious accidents from that prolific cause of accident—over-winding—occurred at these collieries. To prevent their recurrence, the proprietors—Messrs. Fletcher and Co.—directed Mr. Ormerod to select the most effective apparatus he could find for preventing over-winding. Mr. Ormerod carefully investigated a great many inventions, but with respect to all of them there was, as he conceived, the serious defect of liberating themselves at the bottom of the contrivance. With the contrary view in his mind, he saw that if they were set free at the top instead of the bottom nothing but the rope and the shackle at the end need go over the pulley. Accordingly he set to work to invent an apparatus on this new principle, and, after much patient labour, he has at length succeeded, and the result is the exceedingly simple and thoroughly efficient apparatus we have shown in the accompanying engraving. By so constructing it that it will lock itself when drawn into the cylinder, the inventor has produced an apparatus which accomplishes the threefold purpose—firstly, of disconnecting itself with certainty; secondly, remaining behind whilst nothing but the rope goes free; and, thirdly, of catching the cage in falling back again. The invention consists simply of a link or shackle formed of three plates placed side by side, and connected together at a point about the middle of their length by a central stud, upon which the plates turn. In these plates slots are formed, in which the shackle pins that connect the rope with the cage are contained. We have a well-made working model of the link before us, which we have manipulated over and over again with invariably satisfactory and unflinching results.



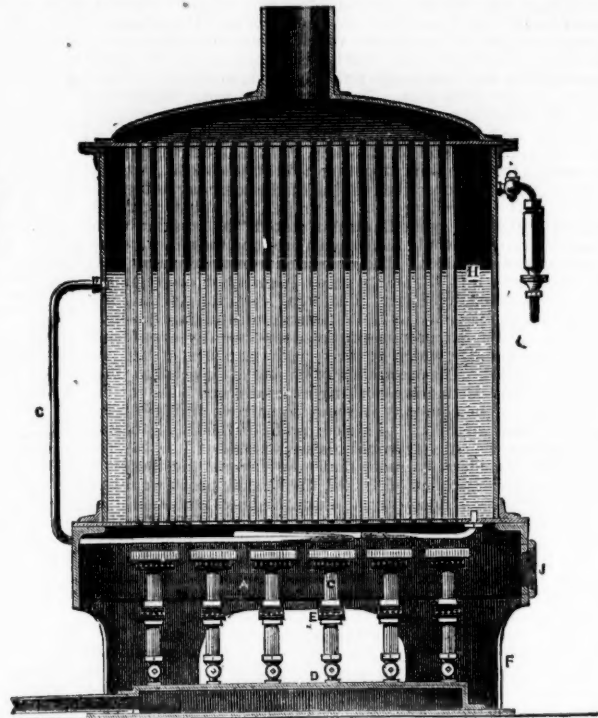
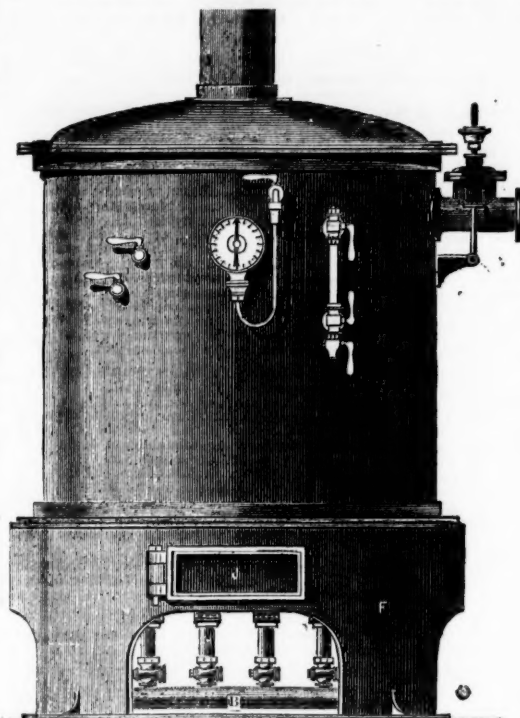
In our engraving, Fig. 1 represents a front elevation of the link as it appears when duly connected, in which position it forms a permanent union between the rope and the cage; Fig. 2 represents a side view of the same. Fig. 3 represents a front elevation of the link as it appears when the rope is disconnected, and the cage retained upon the top flange of the disconnecting tube. *a a* are the outside plates of the link, and *b* is the inside or intermediate link; these links are placed side by side, and connected together by the stud *c*, upon which the plates turn as on a centre. The two outside plates are provided at the top with curved slots, *d d*, each having an opening extending to the edge of the plates, and the bottom slots, *b' b'*, are formed in the plates, which, however, do not extend to the edge, and have no exit for the lower shackle pin. The intermediate plate, *b*, is also provided with two vertical slots, *g* and *h*, the upper slot, *g*, being open at the top, and the lower slot, *h*, closed. These slots, when combined in the position shown in Fig. 1, are arranged so as to embrace and retain the pin, *i*, connected with the suspending or winding rope, and the pin, *k*, connected with the cage, hoist, or receptacle. A small hole, *r*, which corresponds in each plate (when in the position shown), is filled by a soft metal pin, which is inserted through the plates to prevent their moving without the necessary pressure, and which thus forms a permanent union or link when in this position.

The inclined edge of the intermediate plate, *b*, projects beyond the edges of the other plates, and in such position the rope and cage are properly connected for working. Should, however, the cage be lifted too high, so as to bring it near the winding pulley, the link enters the cylinder, *m* (Fig. 3), which is permanently and securely fastened at a proper distance between the pulley and the shaft, or pit opening, and when the link has been drawn sufficiently through, so as to allow the upper end to project above the flange, or collar of the tube, *m*, the interior surface of the tube, *n*, will have forced or compressed the edge of the plate, *b*, level or even with the other plates, *a a*, which will cut or break the soft metal pin, and cause the interior vertical top slot, *g*, to force the pin, *i*, from the curved slots in the outside plates, so as to make all the vertical slots coincide, and one common opening out at the top of the links will be formed, thereby allowing the pin, *i*, connected with the rope to escape. The catches, *o o'*, of the links overlap, and are caught by the flange, *z*, of the tube, *m*, whereby the release of the cage from the rope, and the retention and safety of the cage, are simultaneously effected. When the inclined edges of the plates project above the flange of the cylinder, as seen in Fig. 2 (at the time the cage is released), the links become locked in such position, and are retained in and supported by the tube or cylinder until the cage is uncoupled, or its weight removed from the links. This locking is effected by means of the pin, *k*, which enters the vertical slots in the lower ends of the plates, when it is forced from the curved slots in the outside plate of the link whilst passing into the cylinder, and is further locked by means of a pin projecting from each side of the middle plate, and which passes along inclined slots into recesses cut in the inside faces of the two outside plates, as seen in the detached view in Fig. 4, which is a section through the line A B of Fig. 3.

We pass over the numerous trials of this apparatus, which certainly proved its perfect working, but were only experimental after all, preferring to give an instance of its utility which has just occurred in actual practice. This is the grand test of any invention, and we are glad to be able to record an instance in favour of the present one at so early a period of its career. The circumstance in question occurred at the Mesnes Colliery, Wigan, where the apparatus has been adopted, and was about to be tested. This, however, was accidentally effected before the time appointed, but it proved the

efficiency of the link beyond a doubt, and removed the necessity of any further trials. It appears that the eccentricities of the engine got loose while the engine was at full speed; the engineman thus lost control of the engine, which ran the pulley in at full speed. The rope was released, and the cage remained suspended, and thus a serious accident was prevented. We consider Mr. Ormerod's invention to be a sound, practical piece of mechanism. As such, it cannot fail to recommend itself to every colliery manager, and to come into general use, and cause accidents from overwinding to be numbered with things of the past.—*Mechanics' Magazine.*

GENERATION OF STEAM BY GAS HEAT.



It has now become so general to employ steam in every possible position, almost the sole question raised by the man of business seeking to replace manual or horse labour by steam being with regard to the amount of space required, that for some time past the efforts of inventors have been directed to producing compactness and efficiency in a machine capable of being sold at a moderate price. Reference was sometime since made to the invention by Mr. A. JACKSON, at Mr. Middleton's, Loman-street, Southwark, of an improved boiler, in which the steam was generated by gas heat, and it has now become very generally adopted in London warehouses and elsewhere, giving in every case the utmost satisfaction.

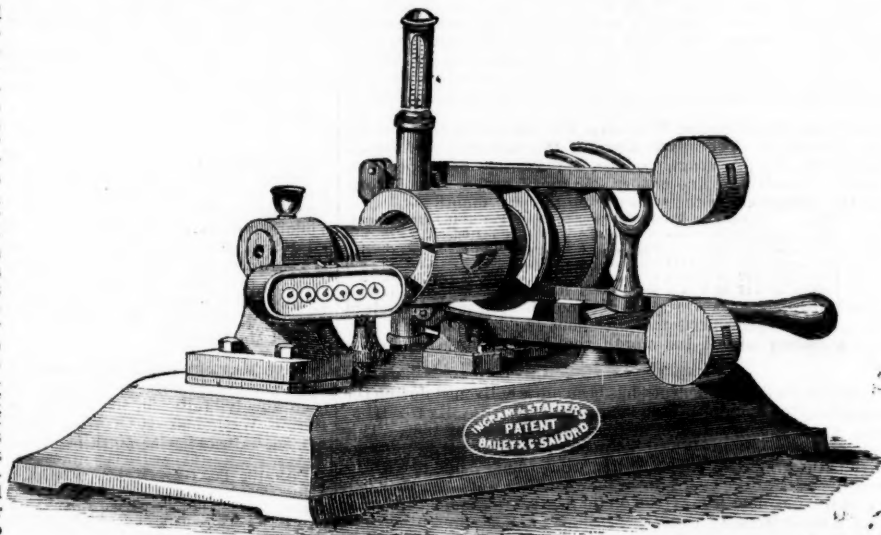
On Tuesday an opportunity was afforded for inspecting one of the boilers in actual use, at Lyon's Wharf, Queenhithe, and its efficiency was certainly beyond question. The boiler, which is of vertical multitubular construction, is about 2 ft. 6 in. diameter, and, including the space occupied by the heating chamber, about 6 ft. high. The heating arrangement consists of 23 burners, forming a series, revolving on a centre joint, so that the whole can be easily and speedily lighted by means of a small auxiliary jet, attached to a flexible tube, provided for the purpose. The arrangements will be more perfectly understood from consulting the above diagrams, which represent the exterior view and vertical section respectively. *A* is the gas furnace; *B* the gas chamber; *C* the gas-burners; *E* the valve for the admission of air; *F* the pedestal for forming the furnace and supporting the boiler; *H* the water-line; and *J* the mica furnace-door.

It will be obvious that the system requires no stoker, brickwork, chimney, fire-bars, nor smoke-consuming apparatus; whilst with regard to efficiency, safety, and cleanliness it might be used in a draw-

ing-room; its safety is so unquestionable, that it has been approved by the Warehouse and Wharf Committee of the London Fire Offices, and with ordinary precaution may be adopted without necessitating the payment of extra premium; and its efficiency may be judged of from the fact that a single burner will keep up the pressure (steam having been once raised), whilst the engine is standing, and can be increased at pleasure at the rate of 6 lbs. per minute, the command being instantaneous. The consumption of gas is stated to be less than 100 cubic feet per horse per hour, so it is not surprising that one of the testimonials relating to an engine now some time in use states that "the engine and gas-boiler are working as well as possible, and are found to be very easily managed; I keep up steam 14 hours a day (the engine almost constantly going) for about 2s., and have had no trouble or stoppage whatever;" and that all who have used it express their readiness to recommend it. The purposes to which the improved boiler is applicable are almost innumerable, for not only can it be used with economy wherever an ordinary gas supply exists, and the occasional use of steam power is required, but in many places where, hitherto, the use of steam, although desirable, has been altogether impracticable, owing to the limited amount of space at disposal; whilst, with regard to economy, it will suffice to state that in one of the establishments where a boiler and crane are erected, the proprietors estimate that in consequence of the labour saved they will recoup themselves in the short space of nine months, irrespective of the immense advantage in the saving of time. The inventor considers that there is little doubt that this system of heating boilers could be very advantageously used in coal mines, where gas can, of course, be readily obtained.

NEW LUBRICANT TESTER.

Next to the machine itself a good lubricant is probably of the greatest importance in securing economy in the use of steam, yet until recently we have had no reliable means of testing the relative value of lubricants, and have been compelled to determine by mere guesswork whether one or another oil is the more entitled to favour. The attempt to form an estimate of the value of an oil by taking its specific gravity has become almost useless, owing to the extensive introduction of oils whose lubricating powers are not at all in proportion to their gravity. To overcome the difficulty Messrs. J. BAILEY and Co., of the Albion Works, Salford, Manchester, are manufacturing a very ingenious oil tester, an engraving of which is given, the invention of which is given, the invention of Messrs. Ingram and Stapfer. It will be seen that the instrument consists of a bed-plate, two pedestals, fast and loose pulleys and strap, fork, two brass steps for producing friction, a counter to show the revolutions, and a thermometer to indicate the temperature produced. By observing the number of revolutions required with various kinds of oil to produce a given increase of temperature, the value of each as a lubricant can of course be at once ascertained, for it will be obvious that if a certain quantity of one oil will produce a certain temperature with 7500 revolutions, an oil the same quantity of which will require 10,000 revolutions to produce the same temperature, the value of the latter oil will be 33 per cent. greater than the former, or, in other words, if the first oil be worth 6s. per gallon, the second is equally well worth 8s. To consumers, oil merchants, refiners, and coal and mineral oil companies such an instrument must prove of almost incalculable



value, as it will enable them to test cheap oils, and experiment upon various mixtures, in order to ascertain the peculiar value of each for quick machinery and heavy bearings respectively. The correctness of the principle upon which the machine acts will be at once recognised, when it is considered that the heat caused by the friction of machinery is known to be so much power lost, since whatever retards motion produces heat, so that a good oil will reduce friction and prevent the accumulation of heat longer than an inferior one.

Messrs. Bailey and Co.'s oil tester is being very extensively adopted in various parts of this country and abroad, and in every instance has given great satisfaction.

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ble fact that had it not been for the most culpable neglect on the part of those to whom the management of the affairs of the company was intrusted the success of the mines would have been sure and great, instead of serving, as the present dilemma of the shareholders does, the enemies to Irish mining enterprise as a further means for its discouragement. A less important, but for the late English shareholders not less interesting, object of our details is the light which they throw upon the probable motives which not long ago actuated a majority of the company to use all the powers at their command, unfortunately but too successfully, to have the financial and other management removed from London to Dublin, from which time may be dated the course of gross mismanagement and speculation which brought the whole concern to the brink of complete ruin, and is best shown by the following figures, quoted from the statements publicly made at the adjourned meeting, held on the 11th inst. The cost of the mine, including payment to Mr. Markham Brown, was 23,144. 19s.; new workings wasted, 13,217.7; and directors' fees absorbed, 3350. The board took 1500s.; Mr. Brown, 900s.; and Mr. Mackey, 950s.; and office expenses for eight years, 2400s.; making together a total of 43,213.7, which, taken from 50,000s., the subscribed capital of the company, left a balance of 6786.7. The overcharge for labour, and the plunder carried on, amounted to 10,200s. As the Chairman stated, "had matters been properly carried on there would have been a profit on the mines for the last two working years of 4000s. The ores raised from the mines in 1865 and 1866 were worth 16,861.7, and a great quantity of ore remains, requiring only working expenses. The total cost for working the mines henceforth is estimated at 2210s. per annum, and Capt. Bishop, the company's mine agent, promises to raise for several years at least 9000 tons of ore annually, which at the very lowest figure, of 10s. per ton, would give 4500s. The precipitate of copper is expected to yield 1000s.; total 5600s. Deducting working expenses, and 350s. for interest on the money the company is about to borrow, and 1000s. for contingencies, there would still be a clear profit of 2000s. per annum. But assuming that the sulphur would realise, instead of 10s., 15s. per ton, a price still considerably under that now current, and that contingencies absorb 500s. in lieu of 1000s., the annual profit would be 4750s. instead of 2000s. According to Capt. Bishop's statement "of 9000 tons raised, 600 tons would be copper ore worth 1000s.," thus still further increasing the estimated and very probable profits of the mines. The late directors are threatened with civil process for the defalcations alleged to have been committed during the time they held office, and their secretary, Dedrickson, has recently been arrested and charged at the Head Police Office with the misappropriation of funds of the company since his appointment in 1863.

To the report already given of the proceedings at the meeting of the Wicklow Copper Mining Company, held on the 11th inst., we may add, as affording information of general interest regarding the home alkali trade, that the Chairman (Mr. Thomas Hone) stated that at the previous two half-yearly meetings the directors prepared the shareholders not to expect that the concern would be as flourishing as it had been, in consequence of the great stagnation of trade. They were obliged to reduce the price of their ores from 25s. until they arrived at the present price of 18s., and at this reduced price the demand was not satisfactory. They had delivered 15,000 tons of ore in the six months ending Sept. 1 last. Having regard to the present low prices, the directors preferred not to enter into contracts for long periods. Both Spanish and Portuguese ores had interfered considerably. The quantities of foreign ore brought into the Mersey, where their trade was principally carried on, was 50,000 tons in 1864; the same in 1865; in 1866, 63,000 tons; and in 1867, 82,000 tons. This last return included 12,000 tons Norwegian ore, a new ore lately introduced into Eng'land. In the first three months of the present year the quantity of ore brought into the Mersey was 15,000 tons, showing a considerable reduction as compared with the corresponding period in 1867. So far as the information of the directors went, they did not think that the present prices remunerated the producers of foreign ore. With regard to the new alkali manufacture, situated at Arklow, they were giving it every facility in their power, believing it to be of the utmost importance to encourage a few such establishments. They had given ground for the works, and had also entered into a satisfactory contract to supply a class of ore that hitherto had no demand in the country—"small." He was happy to say that other alkali works were about being established, one at Wicklow and another in Dublin. He hoped to see many of them, for nothing had prospered more in Ireland than alkali manufactures of late years. The company had reduced the raisings to 4000 tons, considering it not to be for their interest to accumulate too large a stock, so long as they could not sell at remunerative prices. Their engineer was in expectation of raising an additional quantity of iron ore, which would give them as much profit as pyrites. They had confidence that with the general revival of trade their trade would also increase, and at good prices. He was happy to say the mine was never in a better state. They were never before in a position to produce a greater quantity or a better ore. The 5600s. profit on the half-year was estimated at the present price of 17s. 6d. per ton, affording a dividend of 6s. per share, or at the rate of 24 per cent. per annum (on 50s. paid up), which was declared, as already stated in last week's Journal.

At the Truro Ticketing, on Thursday, 4004 tons of ore were sold, realising 19,365. 3s. The particulars of the sale were:—Average standard, 117. 12s.; average produce, 63; average price per ton, 47. 16s. 6d.; quantity of fine copper, 258 tons 5 cwt. The following are the particulars of the sales during the past month:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Mar. 19	3611	119 12 0	63	47 16 6	14 7	73 0 0
Apr. 2	2103	109 4 0	79	51 2 0	14 7	73 0 0
Apr. 9	1827	119 6 0	63	48 6 0	14 7	73 0 0
Apr. 16	1827	119 6 0	63	48 6 0	14 7	73 0 0
Apr. 23	4004	117 12 0	63	47 16 6	14 7	73 0 0

Compared with last week's sale, the decline has been in the standard 37. 10s., and in the price per ton of ore about 4s. 6d. Compared with the corresponding sale of last month, the standard has slightly advanced.

The mining feeling of Redruth has been quite enlivened during the last month by the fine prospects opening out at WHEEL EMILY HENRIETTA, which promises to be the great mining prize of 1868. This mine immediately adjoins Wheal Seton on the east, and is on the same parallel as the great Old Wheal Crofty Mine, which made one of the greatest deposits of ore ever known in West Cornwall. In the 60, a course of ore has now been driven on for nearly 20 fathoms in length, ranging in value from 30s. to 40s. per fathom; and the present eastern end is fully 4 feet wide, producing upwards of 6 tons of copper ore, worth 35s. to 40s. per fathom. The 70 has also been recently commenced driving, and will soon be under this ore ground, when, from the character of the lode, and the quantity of water it is letting down, a still better course of ore is expected. The mine has now ceased making calls, and when the ore is opened on in the 70 will be at once in a position to enter the Dividend List. The value of the mine has also been considerably enhanced by a grant of new ground eastward, which has just been most liberally made by the lord, Mr. John F. Basset, of Tehidy, although it approaches his park. Altogether the prospects are most cheering, and have thrown quite new life into the Redruth and Camborne district, where the depression of the last three years has been so severe, for it shows the unfounded nature of the notion which has gone abroad that West Cornwall is exhausted. The truth is, there are as rich mines as ever to be found, if only judgment and patience be exercised; and there never was a time more favourable for investment than the present, when everything is so depressed. Even Emily Henrietta, which has doubled in price within the last two months, is yet selling at the merely nominal price of (811 shares at—say, 30s.) 24,000s. Ten years ago a mine with such prospects would be selling for 60,000s. or 70,000s. [Since the above was written we learn, by telegram, that ore has been cut in the 70, several fathoms before it was expected; in consequence of which, as will be seen from our City Intelligence, shares have gone up considerably in price.]

The HUMBOLDT SILVER MINING COMPANY, with a capital of 60,000s., in shares of 5s. each, has issued its prospectus. The property to be taken and worked by the company, known as the Honey Lake Mines, consists of nine parallel silver lodes, each 1465 feet in length; on the continuations of these lodes the Tallulah, Empire, and Essex Companies are now in full and most prosperous operation. The prospectus states that the ores equal, and will probably exceed, in richness those of any lode in the Pacific States. Those only of

second-class yield four times the quantity of silver given by the best of those taken from the famous Comstock vein, the proprietors of which are being reimbursed at average rates of from 203s. to 700s. per cent. per annum on the capital employed. The property is within three miles of the Central Pacific Railway, and within four miles of the Great Humboldt Canal. The vendors are to receive for the property 30,000s. in shares of the company, and these shares are not to participate in profits until the amount of the paid-up capital has been returned to the subscribing shareholders. This payment is to be secured to the subscribers by debenture bonds of the amount paid up on their respective shares, giving a first charge on the mines, the reduction works, plant, and stock. After the redemption of these bonds, which is to be effected within three years from this date, the profits will be divided ratably among all the shareholders.

At Parys Mines, near Bangor, a dividend of 27. 10s. per share was declared in February last.

At Creegbarrow and Penkevil United Mines meeting, on April 16, the accounts for the six months ending January showed a credit balance of 679s. 8s. The profit on the six months' working was 693. 6s. A dividend of 55s. 6s. (11s. 6s. per share) was declared, and 43s. 3s. carried to credit of next account. Capt. P. Pryor, J. Blight, and J. Cock reported upon the various points of operation. To prove that their profit is fairly realised, they think it right to say that it has not been obtained by any mode but that of fairly developing the mine; as a proof of which, they have sunk, driven, and stoped 505 fathoms 5 feet of ground, which has produced 75 tons 13 cwt. 2 qrs. and 20 lbs. of black tin. Several important resolutions were passed. The whole of the tin is henceforth to be offered to the smelters, and sold by tender, and all the materials required, of the value of 20s. and upwards, are to be bought by tender. The pursuer was authorised to pay to the Police adventurers the water charge of 20s. per month, upon being satisfied that the resolution of Oct. 4, 1867, with reference thereto, has been duly entered in the Police cost-book.

At Cook's Kitchen Mine meeting, on April 16, the accounts showed a debit balance of 631. 3s. 3d. It was resolved that "This meeting desires to express its deep sense of the loss sustained by the death of the late respected manager, Capt. Charles Thomas, who in an eminent manner enjoyed the esteem and confidence of the shareholders during the many years he held the management of the mine." Capt. Josiah Thomas was appointed manager of the mine; the salary of Capt. Thomas was increased to 10s. 10s. per month; and the Tin-croft adventurers required to pay 5s. per month for the use of the man-engine for not exceeding 20 men, and drawing water, and 2s. per ton for stuff drawn from the 212 winze.

At East Wheal Russell quarterly general meeting, on Thursday, the accounts showed a debit balance of 333. 13s. 6d. A call of 7s. per share was made. Details will be found in another column.

At West Wheal Kitty general meeting, on Thursday (Mr. J. B. Reynolds in the chair), the statement of accounts showed a debit balance of 523. 11s. 5d. A call of 2s. 6d. per share was made. Details in another column.

At the Elbow Vale Company (extraordinary) meeting, yesterday (Mr. C. K. Anderson in the chair), the resolutions reducing the liability upon the shares were confirmed. Details in another column.

At the Imperial Silver Quarries Company meeting, on Monday (Earl Poulton in the chair), the directors reported that, according to the balance-sheet to Dec. 31 last, 37,545s. of capital remained unissued. Since that time 4000s. has been subscribed, and arrangements have been concluded for about 5000s. more by May. At the present moment the Chairman was not of opinion that money is required, and he thought it would not be desirable to increase their pecuniary resources by any larger issue of debentured shares than is strictly necessary, particularly if the value of the shares alone will advance, so that they may, perhaps, be able to avoid giving debentures along with these for money subscribed later on. Mr. Chalmers had suggested that shafts should be sunk upon the Esmeralda, Florence, and Cortez silver lodes, in order to obtain rich ore sooner, and to have a large additional sum, as it rendered pumping and other apparatus essential—the name of pump suggesting the risk. They had decided to confine operations to the tunnel, at all events for the present. It may take a few days longer, but they thus get to all of the lodes in the mountain at great depths, and without risk. The tunnel so frequently referred to is 6 ft. wide at the bottom, tapering to 5 ft. at top, 7 ft. high from the bottom of track to centre of arch, on a grade of 3/4 in. to every 16 ft., with a drain 1 ft. at bottom, 18 in. at top, and 12 in. deep. The balance-sheet and report were unanimously received and adopted.

At the Frontino and Bolivia (South American) Gold Mining Company meeting, on Wednesday (Mr. G. Noakes, F.G.S., in the chair), the report and balance-sheet were received and adopted. Mr. H. L. Phillips was re-elected managing director, and Mr. Wardrop was elected director. Details elsewhere.

At the Anglo-Brazilian Gold Mining Company meeting, on Tuesday (Mr. Henry Day in the chair), the report and balance-sheet were received and adopted. Details in another column.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUES DEPARTMENT a decrease in the "notes issued" of 271,430s., represented by a corresponding decrease in the "coin and bullion" on the other side of the account. In the ASSETS DEPARTMENT there is shown an increase in the "public deposits" of 189,059s.; in the "other deposits" of 191,615s.; and in the "rest" of 3351s.; together, 386,025s.; and a decrease in the "seven day and other bills" of 11,693s. = 374,422s.; and deducting therefrom 34,327s., the increase on the "other securities," there remains a total increase in the reserve of 339,895s.

The directors of that extraordinarily successful undertaking, the Panama Railroad Company, have declared the usual 6 per cent. quarterly dividend, and an extra cash dividend of 20 per cent., being together equivalent to 44 per cent. for the year.

The Fairbairn Engineering Company (Limited) report, to be submitted at the general meeting on Thursday, states that the company's business has been restricted, owing to the stagnation of trade, and the directors say that they do not see any immediate prospect of better times. Out of the available balance of 19,627s. it is proposed to pay a dividend at the rate of 6 per cent. per annum, to apply 4000s. to the redemption of the debenture debt, and to carry forward to the new account 1290s.

At the Animal Charcoal Company annual meeting, on Thursday, a dividend was declared for the half-year ending March 31 at the rate of 12 1/2 per cent. per annum. The balance carried forward is 1306s. 15s. 10 1/2d.

Mr. Frederick B. Smart has been appointed liquidator of the Princess of Wales Slate Company (Limited).

On the Stock Exchange the following prices were officially recorded in British Mining Shares during the week:—West Seton, 207 1/2; Great Laxey, 17 1/2; Great Wheal Vor, 18; Marke Valley, 6 1/2. In Colonial Mining Shares the prices were:—Port Phillip, 1 7/16ths, 1 1/2; Yudanamutana, 2 1/2; 2 7/16ths, 2 5/16ths, 2 1/2; Scottish Australian, 1 1/16th, 1 3/16ths, 1 1/2; Vancouver Coal, 3 1/2, 3 1/4; Cape Copper, 11 1/2. In Foreign Mining Shares the prices were:—Chontales, 3 3/4, 3 3/8, 3 3/4, 2 9/16ths; Frontino and Bolivia, 3, 13 1/16ths; Panulicillo, 2, St. John del Rey, 20 1/2, 21, 20 1/2, 20 1/2, 20 1/2; Anglo-Brazilian, 9 1/16ths, 3, 13 1/16ths; Don Pedro, 2 5/16ths, 2 1/2, 2 1/2, 2 1/2 prem.; United Mexican, 1 1/2.

COAL MARKET.—The fresh arrivals this week have been very trifling, amounting only to 53 ships. The business of the market has been steady, fully supporting the last prices for all descriptions. Hetton Wallesend, 19s.; West Hartley, 16s. 3d.; Bute Tanfield, 14s. 3d. Unsold, nil: 50 ships at sea.

COPPER TRADE.—Messrs. Vivian, Younger, and Bond (April 24) write:—"The business in West Coast produce has not been quite so extensive during the week just closed, but values are fairly sustained. The transactions have been 370 tons bars, of good ordinary brands, at 70s. to 77s. Liverpool spot, the last sale having been 100 tons bars out of second hands, including 50 tons Urnereta, at 76s. Early in the week 1600 tons of ore were sold at 15s. 6d. per unit, and later a small quantity was parted with at the same figure. A parcel of 50 tons Urnereta ingots at Swansea fetched 80s. Several parcels of raw English, out of second hands, have been taken off the market, and there is little of this kind offering cheap. Wallaroo has made 83s. cash, and 83s. 10s. with extra prompt, whilst a little Burra has been sold at 82s. 10s. cash. The market closes firm. Advances from Valparaiso have been received via New York to the 10th of March, with list of charters to that date of only 500 tons of fine copper, all in bars, the information being added that the natives were beginning to speculate in the metal, with the intention of holding there for several months, counting on decreased consumption. Should this prove to be the case to any extent, the charters may be expected to fall off very considerably."

GOLD MINING IN BRAZIL.—The profit realised by the Don Pedro North del Rey Mines during February amounted to 3665s., as against 2700s. for January. The advices, together with those of the other Brazilian gold mines, appear in another column. It is satisfactory to find that the loss upon the month's operations at St. John del Rey was not nearly so large as anticipated.

ROYAL COPPER MINES OF COBRE.—Several correspondents having applied to us for information respecting this company, we very briefly state that, although in the years 1865 and 1866 the company sustained heavy loss, the operations for 1867 have been carried on at no loss, but a small profit. Since the registration of the company the liabilities of the company have been materially reduced, the calls hitherto made having been solely applied to the reduction of such liabilities, and not in any way for the operations of the company. At present 47. 10s. per share remains uncalled. In a former Journal we stated that in consequence of the improvement in the copper market a much smaller sum than that originally calculated on would be required for the future explorations of the untried ground. At the beginning of the year 1866 the shares stood at 26s., but for a considerable time past there does not appear to have been any quotation for them.

IRONWORKS IN ITALY.—The Proprietor of EXTENSIVE ITALIAN IRONWORKS, in FULL AND PROFITABLE WORK, is DESIROUS OF EXTENDING THE TRADE, and would be GLAD TO MEET with a CAPITALIST or COMPANY to JOIN HIM for this purpose. The iron ore is of first-rate quality, fuel is abundant, and there is considerable water-power. Further particulars may be had on application to P. LE NEVE FONSTEN, Esq., Society of Arts, John-street, Adelphi, London, W.C.

MINING IN PRUSSIA.—A COPPER MINE in RHENISH PRUSSIA, at two hours' distance from the Rhine, producing from 20 to 24 per cent. pure copper, and possessing all necessary houses and machinery, is, on account of the advanced age of the proprietor, TO BE SOLD, on moderate terms. Particulars can be had on application, post free, to "A. B.," No. 188, Leadenhall-street, London, E.C.

MANAGER WANTED.—WANTED, A RESIDENT MANAGER for the SNAEFFELL MINING COMPANY (LIMITED), ISLE OF MAN. The manager must be a thorough practical miner in all its branches, able to dial and map, and must have had some experience as a manager. Salary, £150 per annum, a comfortable house, garden, and a little land, with coals and candles. Apply by letter, addressed, with testimonials, to the SNAEFFELL MINING COMPANY (Limited), Douglas, Isle of Man.

SECRETARYSHIP WANTED, in TIN, COPPER, or LEAD MINES, in an office long established, and where considerable experience in this business is available. Apply to "X.," care of Davies and Co., 1, Finch-lane, Cornhill, E.C.

ORREL COAL COLLIERY, WIGAN.—WANTED, A PARTNER, to TAKE THE PLACE OF ONE OWNING A SIXTH PART, who is retiring from business. Apply to ASHTRUP CARISS, Accountant, Cook-street, Liverpool.

MINING PROPERTY.—WANTED, TO PURCHASE, CHINA-CLAY WORKS, CHINA-STONE, or other ELIGIBLE MINING PROPERTY. A Gentleman wishes to INVEST MONEY in either of the above. Address, with full particulars, to "W. K.," 26, Bankside, Southwark, London, S.

WANTED, for WHEEL BULLER MINE, A GOOD SECOND-HAND or NEW WEIGH BRIDGE. To treat for the same, apply to the manager—FRANCIS PRYOR. Dated Claremont, Redruth, April 23, 1868.

WANTED, FOUR THOUSAND POUNDS, upon SECURITY of an EXCELLENT COLONIAL COLLIERY. Apply, with real name and address, to J. H. HOWARD, Esq., solicitor, 9, Quality-court, Chancery-lane.

IRON ORE—TO CAPITALISTS.—A Gentleman having upon his property, close to a railway, a most valuable deposit of RED HEMATITE IRON ORE, wishes to meet with one or more Gentlemen, with about £20,000 capital, to WORK the same, by which a return of £7000 per annum might be realised. There are coal, limestone, and claylands to be had on the estate, so that smelting could be carried on most advantageously. Apply to "Alpha," Messrs. Hepburn and Co., Stationers, No. 7, Pancras-lane, City, E.C.

TO SLATE QUARRY PROPRIETORS.—A SLATE QUARRY MASTER, who has thorough practical knowledge from long experience in NORTH WALES and GORNWALL, is OPEN to a RE-ENGAGEMENT. Good references from last employers and others. Address—"J. T.," Boscastle, Cornwall.

TO CLOSE A TRUST.—ON SALE, ONE HUNDRED AND FIFTY SHARES in the TRELOGAN LEAD MINE, situate near HOLYWELL, FLINTSHIRE. The shares are fully paid up—namely, £10 per share—and must be sold. Apply to Mr. LEDWARD, Crypt Chambers, Chester.

TO BE SOLD, CHEAP, TWO THOUSAND TONS NEW and OLD RAILS—BRIDGE, FLANGE, and DOUBLE-HEADED—with the necessary accessories. Apply to Mr. JOHN ROBERTS, Iron Merchant and Metal Broker, 55, Tower-buildings East, Liverpool.

IN THE MATTER OF THE COMPANIES ACT, 1862, AND OF THE VOLUNTARY WINDING-UP OF THE DYFNAGWYD MINES COMPANY.

THE CREDITORS OF THE ABOVE-NAMED COMPANY ARE REQUIRED, on or before the 23d day of May, 1868, to SEND in their NAMES and ADDRESSES and the PARTICULARS of their DEBTS or CLAIMS to George Hadley, of No. 20, St. Helen's-place, in the City of London, the liquidator of the said company, or in default thereof they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such claims or debts are sent in and proved.

COBB AND SOUTHEY, Solicitors to the above-named Liquidator. Dated this 23d day of April, 1868.

LEAD ORES.				
Date.	Mines.	Tons.	Amount.	Purchasers.
April 20	Minera Union	40	£11 13 6	Walker, Parker, & Co.
23	Wheal Mary Ann	62	23 15 6	Trefry Estate.

BLACK TIN.				
Date.	Mine.	Ts. c. q. lbs.	Price p. ton.	Amount.
April 18	Penhalis	11 9 0	10 10	£645 14 10
22	Kitty (St. Ag.)	10 14 2	10 10	590 2 4

COPPER ORES.				
Sampled April 8, and sold at the Royal Hotel, Truro, April 23.				
Mines.	Tons.	Price.	Mines.	Tons.

Devon Great Consols.	132	£2 6 6	Hingston Down	70	£4 1 6
ditto	132	6 2 6	Brookwood	70	4 10 6
ditto	123	5 7 6	ditto	68	4 4 0
ditto	123	5 6 6	ditto	64	2 9 0
ditto	115	4 6 0	ditto	45	3 9 6
ditto	114	5 13 6	ditto	31	10 12 6
ditto	113	5 2 6	Okel Tor	103	2 7 0
ditto	112	5 2 6	ditto	95	3 11 6
ditto	108	5 8 6	ditto	67	6 12 6
ditto	101	5 11 6	Gawton	67	3 2 6
ditto	98	5 12 6	ditto	66	3 0 6
ditto	91	3 6 6	ditto	58	3 3 0
ditto	86	6 2 6	ditto	41	1 11 0
ditto	85	3 14 6	ditto	22	4 16 6
ditto	65	5 6 6	East Caradon	80	4 13 6
ditto	64	5 16 0	ditto	35	6 10 6
ditto	45	2 4 0	ditto	26	6 12 6
ditto	40	4 1 0	Prince of Wales	51	7 12 6
ditto	44	3 15 6	ditto	50	5 6 6
ditto	32	14 16 0	ditto	38	7 7 0
Marke Valley	92	4 6 0	Wheal Friendship	45	7 12 0
ditto	86	3 1 6	ditto	35	7 3 0
ditto	85	3 2 0	New East Russell	46	6 8 6
ditto	74	7 4 6	Wheal Russell	43	5 1 0
ditto	45	2 4 0	Gonamena	24	6 15 6
ditto	40	7 5 0	ditto	17	3 2 0
ditto	33	3 9 6	Cradock Moor	33	6 13 6
Hingston Down	99	3 2 6	Belstone	23	8 15 0
ditto	90	2 15 6	West Great St. George	17	2 12 6
ditto	68	2 12 6			

TOTAL PRODUCE.					
Devon Great Cons.	1850	£9850 10 6	Wh. Friendship	80	£592 5 0
Marke Valley	455	1961 17 6	New East Russell	46	295 11 0
Hingston Down	320	994 7 0	Wheal Russell	43	217 3 0
Brookwood	268	1220 8 0	Gonamena	41	215 6 0
Okel Tor	260	1014 2 6	Cradock Moor	33	220 5 6
Gawton	254	761 8 6	Belstone	23	201 5 0
East Caradon	175	841 12 6	West St. George	17	44 12 6
Prince of Wales	169	934 8 6			

Average standard	£117 12 0	Average produce	6 1/2
Average price per ton	£4 16 6		
Quantity of ore	4004 tons	Quantity of fine copper	258 tons 5 cwt.
Amount of money	£19,365 3 0		

LAST SALE.—Average standard, £122 16 0—Average produce, 5 1/2. Standard of corresponding sale last month, £119 12 0—Produce, 6.

COMPANIES BY WHOM THE ORES WERE PURCHASED.			
Names.	Tons.	Amount.	
Vivian and Sons	719	£2406	13 0
Freeman and Co.	247	1481	6 6
Greenfield and Sons	603	3683	5 6
Sims, Williams, and Co.	167½	1281	1 6
Williams, Foster, and Co.	919	3993	10 6
Mason and Elkington.	260½	1548	13 0
Bankart and Sons	874	1303	10 0
Copper Miners' Company	516	2129	5 0
Charles Lambert Company	198	427	18 0
Total	4004	£19,365	3 0

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Notices to Correspondents.

AUSTRALIAN FREEHOLD GOLD MINING COMPANY.—Can any reader inform me what has become of the funds of this company? A return of 6s. per share was made to the scrip-holders in 1855, and it was understood then that a further amount of 2s. or 3s. per share was available for distribution. Since that time nothing has been heard of in the matter, at least, to my knowledge. The names on my certificates are—Hawkes, Johnston, Orde, Reade, Ronald, Pease, Rumbold, &c., and the purser or secretary's name is Wm. Pulsford. Perhaps some of your correspondents may be able to throw some light on the matter? —A HOLDER OF FOUR HUNDRED SHARES.

MINING IN AMERICA.—Allow me to ask "Correspondent," who writes in the Journal of last week, whether he can give the English public any information respecting mines in America of names—Summit, Ledge, Cedar Hill, Cascade, and Mina San Felipe, San Antonio (California), and San Francisco Oil Company, and oblige—A SHAREHOLDER: *Torquay*.

JAVALI COMPANY.—As a shareholder present at the meeting of this company, on April 15, may I be permitted to correct the report, as given in last week's Journal? In the second paragraph of the Chairman's speech he is made to say "that the board had refused to entertain applications for more than 10,000 shares, since the allotment-list had been closed." For "10,000" read "1000," which is the number the Chairman did give on the occasion.—VERAX.

PRACTICAL MINING.—"R. F." (Hendre Mines) must send the details of the invention to enable an opinion to be formed. The documents required can be examined at the Great Seal Patent Office. The abridgments can be obtained by addressing Mr. B. Woodcroft, the clerk to the Commissioners, Southampton Buildings, London. The prices of those recently issued are—Preparation and combustion of fuel, 17s. 9d.; raising, lowering, and weighing, 11s. 8d.; hydraulics, 15s. 10d.; and railways, 5s. 4d. The amount must be sent by Post-Office order.

PRACTICAL MINING.—"Young Miner" should procure the papers read at the Miners' Association of Cornwall and Devonshire (1s.); and the Glossary of English and Foreign Mining and Smelting Terms (2s.).

THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, APRIL 25, 1868.

THE STRIKE AND THE UNION IN THE IRON TRADE.

Unionism is again making a desperate struggle to force itself upon the English ironworkers. The thing had nearly been stowed away in the lumber-room, because it had proved itself incapable of the uses for which it had been alleged to be fit; for, so soon as it was submitted to the test of service, it was found to be a rude, uncouth arrangement, which, instead of helping, only impeded the movements of those who, acting upon the interested advice of others, had trusted to it for assistance. Harmful instead of helpful, though it might be, yet these same interested ones continued to puff it as the ironworkers' panacea for all trade evils, and the effrontery upon which empiricism lives was believed, as of old, to mean truth. It is true that the promise of one great labour combination for the whole of the iron-making districts in the kingdom had been unrealised, but that did not keep credulous men from hoping that, though they might have objected to it when they did not themselves greatly need it, yet that when they did need it, and it was not so much to the interest of others to forward it, others would, nevertheless, come to their help. "The great alliance" might not have come off when there was a strike in the North and peace in the South; but it might be possible, when there was strife in the South and peace in the North! Why? The only shadow of a reason why was because (as the men in the South had been led to imagine) the men in the North desired to secure an advance upon their present rate of wages, and knew that if in the South wages were brought down, then that they would lose much of the ground upon which they had hoped to stand in making their demand.

Thus were many of the Southern ironworkers buoyed up when they resolved to resist the notice for a reduction in their wages, which their masters too long, for their own and their men's interests, delayed. They had been unable to maintain their local Union in vigour, or to induce more than 25 in every 100 to join it; still they hoped that their fellows elsewhere would do that for them which they could not do for themselves. In fact, that others would work to earn that upon which they might play.

This was the state of things when North and South met at Stockton-on-Tees, on Tuesday, in what the men term a "National Conference." As was to have been expected, the proposed great Union was declared an accomplished fact, and the paid officers by whom the two Unions have been hitherto managed were declared officers of the one great Union. There are to be a president and two secretaries. All this is pleasant enough, and can be accomplished with the smoothness of accomplished diplomacy; but when the practical testing of the reality of the decision comes about, then we find how unreal the thing is. Instead of a prompt and a spontaneous holding out of a helping hand, which the South expected, there is first an offer by the Conference to meet the Southern masters, with a view to a compromise, and then a resolution to "do all in our power to protect the men until the employers are prepared to accept arbitration as a basis of settlement." So that this "protection," whatever it may mean, is all the aid that the men of the North can extend to their brethren in the South to enable them to feed themselves and their families during the progress of a strike, in which it is maintained that both are alike interested. We do not blame the men of the North for not doing more. Our complaint on behalf of their own order, and of the ironmasters, is that they should have done so much. They knew that the struggle was a hopeless one; why, then, should they act so cruelly to the poor men in the South as to encourage them to continue it by any pretence? The men in the South ask for bread, the men in the North give them a stone, but try to hide its worthlessness by calling it "protection." The same heartless pantomime was gone through when "the grand alliance" was resolved upon—also at a "National Conference," which was held some time ago in the South (at Wolverhampton). There, too, a resolution was passed that there should be one Union, and "protection," or something else equally valueless, was promised to the North. Upon it the men there foolishly relied, and had to resort to the soup-kitchen and the labour test. These painful and humiliating expedients would be the alternative of the men in the South if they should consent to be misled by the "Conference."

Happily, however, for their and for their families' present and future interest this is not likely to be the case. They will not lean upon the reed which will only pierce the hand. It had got wind that there was even less Unionism in the North than in the South, and interviews with the masters satisfied them that there would be no yielding in that quarter, not even to the altering of the reduction one-half. Last Wednesday, therefore, some at the night turn and others at the day, the workmen began to resume work at certain of the most notable establishments. When, therefore, a telegram from the Conference reached the Chairman of the Ironmasters' Association at the weekly meeting of the trade on that day in Wolverhampton, offering arbi-

tration, the question had been virtually settled, and an additional illustration furnished of the inutility of such combinations.

Our information as to the real state of things in South Staffordshire at the present time is in every way confirmatory of the opinion ventured by us last week—that if the masters should so determine they have the power to at once put an end to all Unionism, even in its most shadowy aspect. No fewer than 18 works have recently been put to stand there, by reason chiefly of bad trade. From this cause some 400 ironworkers have been thrown out of employment. Nearly all these are now competing for the little work there is to be done. What is there to prevent the masters setting on the necessarily unemployed in the stead of the men who are unemployed voluntarily, and requiring that all others who come on with them shall be as they are—non-Unionists? There is not one out of the 25 per cent. of Unionists in South Staffordshire who would not abandon his Union to-morrow rather than have his place occupied by anyone else. Further, our statement that if masters should say that all men who did not return by a certain day should lose their job would effectually bring the men in, and stop the strike, as is verified in an instance in which this course has been pursued. At one works such a warning was given. The men declined to heed it; but no sooner had only three new hands been put to work in the place of as many turn-outs than at once the men flocked to the works; and the most plaintive appeals have been made to the proprietors to again set on the old hands—appeals that have gone to the length of the wives following the masters to their private residences, some miles away, and there beseeching the reinstating of their husbands, who, they said, "might now go, a whole year without striking a blow."

We have written this article, not to counsel the hasty dismissal of old workpeople, but to again remind the men what power their masters hold in their hands if they should determine to use it, and to show how not only palpably hollow, but also mischievously delusive, are all those combinations which aim at coming between individual men and their masters.

COAL-BORING MACHINERY.

A good deal of interest is felt just now in the borings being made to the coal measures on the estate of Mr. WATERTON, at Walton, near Wakefield. The machinery adopted is entirely different to that generally used in sinking; and, as it has been highly successful, a description of it may be the means of making it more generally known. One great advantage of the machine, which has long been used in the boring of Artesian wells, is that the strata are brought out in solid discs—an object of the greatest importance. On visiting the locality a few days since, we found that one thin bed of coal had been opened out, and that the boring had then gone to a depth of 200 yards, going through clay, shale, slime, &c., the pieces of which brought out by the borer appeared to be about 9 inches in diameter; but it appears that the borers are made to bring out solid pieces up to 24 or 26 inches in diameter. The machine, which is that known as MATHER and PLATT'S patent, is even in an economical point of view invaluable; whilst looking at it in company with an experienced sinker, and a colliery proprietor, the former unreservedly admitted its great superiority over the ordinary plan, whilst the latter suggested that the borer might be advantageously used in drawing out large accumulations of gas from the goaves of the fiery collieries of South Yorkshire. Whether such could be done at a moderate expense is worthy of consideration. The boring-head of the machine consists of a wrought-iron bar, 7 or 8 feet long, on the lower part of which is fitted a block of cast-iron, in which the chisels, or cutters, are firmly secured. Above the chisels an iron casting is fixed to the bar, by which the boring-head is compelled to move round a part of a revolution at each stroke.

The loop or ring by which the borer is attached to the rope is secured to a loose casting on the wrought-iron bar, so as to move up and down about 6 inches. A part of the casting is of square section, but twisted about one-fourth of the circumference, the twisted part moving through a socket of corresponding form on the upper part of a box, in which is placed a series of ratchets and catches, by which the rotary motion is produced. Two objects are thus accomplished—the rotary motion given to the boring-head, the other giving facility for the rope to descend after the boring-head has struck, and so preventing any slack taking place, and the rope from chafing and being injured. The shell-pump is a cylinder of cast-iron, to the top of which is attached a wrought-iron guide. The cylinder is fitted with a bucket similar to that of a common lifting-pump, with India-rubber valve. At the bottom of the cylinder is a clack, which acts as a lifting pump. The bottom clack works in a frame attached to a rod, which passes through the bucket, and also through a wrought-iron guide at the top of the cylinder, kept in its place by a cotter, which passes through a slot at the top of the rod. The pump-rod by which the bucket is worked is of a forked form, allowing the rod to which the bottom clack is attached to peep through the bucket, and also to serve as the link by which the whole is suspended. The wrought-iron guide is secured to the top of the cylinder, and prevents the bucket from being drawn out when the whole is suspended, whilst the bottom clack is so arranged that it can rise about 6 in. from its seating, so as to allow large fragments of rock or other materials to have free access to the interior of the cylinder, when a partial vacuum is formed there by the up-stroke of the pump. The percussive motion is produced by means of a steam-cylinder, and the boring head and piston fall by their own weight when the steam is shut off. The valves are opened and shut by a self-acting motion, derived from the action of the piston itself, which latter moves slowly at first, so as to take up the rope and allow it to receive the weight of the boring-rod by degrees. An arm which is attached to the piston-rod then comes in contact with a clam, which opens a steam valve, when the piston moves quickly to the top of the stroke. The steam is then shut off, and the exhaust valve opened. By moving the clams the length of the stroke can be varied, whilst the fall of the boring head and piston can be regulated to descend slowly or quickly, by means of a weighted valve on the exhaust pipe. It appears that the machine has been successfully tested in going through the New Red Sandstone, the results being all that could be desired. The boring-head was lowered at the rate of 500 feet per minute, the percussive motion performed at the rate of twenty-four blows per minute, and being continued for ten minutes. The cutters in that time penetrated from 6 to 7 in. It is then wound up, when the shell-pump is lowered at the rate of 500 ft. per minute, the pumping continued for 1½ minute, and being charged the pump is wound up. It is then emptied, and the operation repeated. To colliery owners and others interested in sinking operations the machine is deserving of especial attention, for the effectual manner in which the ground is bored, and the means it affords for following and adjusting the strata it passes through. It will also recommend itself in an economical point of view, effecting a great saving in time and labour. To those who are desirous of seeing the machine at work, we have no doubt that an application to Mr. BROWN, mining engineer, Barnsley, or to Mr. R. CARTER, C.E., of Claycliffe,

Barnsley, the gentlemen who have the work in hand, will ensure the privilege of inspection. We may say that the practical men who have already seen it in operation are all agreed as to its value for boring to ordinary or great depths, so that its general adoption appears to be a mere question of time, not only for coal mines, but for all others as well.

COAL IN INDIA—THE KISTNAH DISTRICT.

The question as to the existence of coal in the Kistnah district is at present attracting considerable attention in India, but the dispute appears to be much the same as that which arose in connection with the Australian coal fields—not whether a fuel of acknowledged commercial value exists, but whether it is of that precise character which geologists consider essential, in order to entitle a substance to recognition as coal. Dr. THOMAS OLDHAM, the director of the Government Geological Survey of India, who was directed by the Government to report previously to the granting of 2000 rupees to Major FRANCIS APPELEGATH towards the expenses of exploratory borings, declared that the indications pointed out to him consisted merely of burnt shale, and recommended the Government not to expend another rupee upon the undertaking; whilst Major APPELEGATH offers, in opposition, the very conclusive fact, commercially considered, that he has quarried and burnt the coal in quantities large enough to permit of accurate conclusions as to the nature of the substance being arrived at. The *Madras Athenæum* observes that Dr. OLDHAM asserts that he only discovered traces of burnt shale, adding that at one spot coal was discovered, but in such small quantities that he as much as hinted that it had been placed there for obvious reasons. It now appears that Dr. OLDHAM's brother, who is at the head of the Survey in the Madras Presidency, has also discovered coal at Cumbum, so that its existence in the Kistnah district, and, consequently, the accuracy of Major APPELEGATH's opinion can be no longer doubted, geological theory to the contrary notwithstanding. Referring to the Kistnah coal, Major APPELEGATH (Vizianagram, March 6), writes—

For the following reasons, I state most distinctly that there is coal on the Kistnah:—

1.—That I myself, with the assistance of a native and three privates of sappers and miners, in the presence of several natives now living, quarried and burnt in large open heaps coal which, without the aid of any other fuel than a handful of straw and a flint and steel, burnt to ashes, and any substance or rock that would do that is entitled to be called coal; and, therefore, the late scientific geological report on that part of the country vanishes into an airy nothing, for fiction will not hold good against facts.

2.—That there are no less than six places where a burnt outcrop of shale or coal (it is called shale by Prof. Oldham) exists on the banks of the Kistnah, and that similar burnt outcrops in the Bengal coal fields of Hanjunga and Talegar are naturally considered positive indications of coal, or at least of coal-bearing rocks.

3.—It is important to know that many of the rocks in the immediate neighbourhood of Juggalpettah are considered by the geological survey as much older than the Indian coal, but that one rock, a tessellated sandstone, largely quarried and extensively distributed on the west, and extending far to the east of the town of Juggalpettah, was considered to bear a strong resemblance to a similar rock found immediately beneath the coal in India.

Having established this point, I shall proceed to trace other rocks, well known to many, whose geological horizon has been clearly defined by the Geological Survey themselves.

Between Rajamundry and Ellore there are deposits of "Inter-trappean" beds of rocks, which have been defined by the Geological Survey as equivalent to the age of the Mahalevah sandstones, much newer than the Indian coal, and between Ellore and Condaipilly, in the Kistnah district, at the village of Malially, a rock was found exactly resembling the Panchet conglomerate, or pudding stone—in other words, the diamond-bearing conglomerate, from which the celebrated "Koh-i-noor" was dug, at the village of Puryal, or Puttial in the maps, and, further, that this diamond conglomerate extends for nearly 30 miles along the banks of the Kistnah, and to within six miles of the town of Juggalpettah, for I have quarried it myself on the Noonee Conda Hill, at the foot of which there is an extensive burnt outcrop of shale.

To repeat, it is here established that rocks much older than the coal, and one bearing a remarkable resemblance to a rock found immediately beneath the coal in India, are found at Juggalpettah itself, and that within a short distance (comparatively speaking) of six miles, and extending for nearly 30 miles, a diamond-bearing conglomerate, of the age of rocks immediately above the coal in India, is found, and on the surface of the ground, above the Juggalpettah tessellated sandstone and below the diamond-bearing conglomerate, the first burnt outcrop is met with, and that about one mile from this spot four other distinct patches of burnt outcrops of shale or coal are met with, and the last outcrop is seen at 2½ miles from the town of Juggalpettah. This description applies to the eastern portion of this field, and at four miles due west from these outcrops similar, but smaller, indications are found, and it was at a spot intermediate between these east and west outcrops that I quarried and burnt the coal in large open heaps, as above described.

As to metamorphic rocks being found associated with coal as an impossibility, I would point to every-day experience in other coal fields in India, where they are especially plentiful, where very good coal is found on the Nerbuddah River, in Bengal. Amongst certain professional people at home the diamond is considered a fossil, and no doubt it is one, and a very valuable fossil, too—especially valuable in this country, as an indication of "coal," which, when once properly opened out on the Kistnah, will eventually prove of considerable value to our own presidency. FRANCIS APPELEGATH, Major Madras Staff Corps.

Vizianagram, March 6, 1868.

P.S.—There has been for years great opposition in high places, and various opinions expressed on this point. Someone has said—"I have been in that district and never found coal, and I do not believe there is any there, for if coal had been there I must have seen it." Another has said—"I have been to Juggalpettah itself, and never saw coal, and now it is said it is not more likely to be found there than at 1000 other localities in the adjoining districts." Let these opinions alone. But let us open out a few quarries, and see the extent and thickness of these "combustible shales," for, depend upon it, the coal is not very far from them.

F. A.

STEEL FROM PIG-IRON.

We are sorry that Mr. MILLER, of the Coatbridge Tin-Plate Works by an incomplete reading of the article on this subject, should have drawn erroneous conclusions from it. The point of the article was not that steel had been made from pig-iron, but that Mr. SMITH, C.E., Glasgow, had succeeded in "obtaining from pig-iron direct a steel endowed with such power of resistance as to claim for it the character of a new and unique product." That steel had been obtained from pig-iron was not new to us, but it was something new to obtain this unique metal from ordinary pigs; and while we are quite aware that Mr. MILLER superintended the operations at Gartcosh Steel and Iron Works while attempts were being made to produce a steel of a marketable value from pig-iron, we think we are right in saying that after several thousand pounds had been expended in experimenting and attempting to bring Mr. MILLER's patent to a commercial maturity it had to be abandoned. We do not for a moment doubt Mr. MILLER when he asserts that the steel to which he refers had been tested in "the engineers' shop, the roll-turners, the cutters, the saw-makers, the file-cutters," &c.; but was it ever anything more than tested? It was tried for "locomotive and wagon springs," &c. Yes, Mr. MILLER; but was it ever anything more than tried? If after having been tested and tried in the ways and for the purposes named, why, when an establishment was specially got up for the purpose of its manufacture, was it abandoned? There must have been miscarriage somewhere, and we think the Messrs. SMITH, who bore the greater part, if not the whole, of the preliminary expenses, will bear us out in this finding. If we have been correctly informed, the premises at Gartcosh have been converted into a malleable ironwork, where a kind of soft steel is being manufactured and rolled out into thin sheets for tin-plate purposes. This does not look as if Mr. MILLER's steel had become a favourite with those who tested it, or that the locomotive and wagon springs could be manufactured and sold to advantage. In the public interest, as journalists, we are bound to give "honour to whom honour is due," and if Mr. MILLER will only show us that Mr. SMITH's steel from pig-iron direct is the same as his we will most willingly place him on the pedestal of honour.

COAL IN THE UNITED STATES.—It appears from official American statistics that the quantity of coal imported into the United States in the first four months of last year was 39,931 tons, in the second four months 283,420 tons, and in the third four months 145,371 tons, making a total import for 1867 of 468,722 tons. The value was returned at \$1,334,261, or about 330,000l. The quantity of English coal sent to the United States last year was 123,392 tons (as compared with 134,113 tons in 1866, and 197,401 tons in 1865). English coal thus figured in the foreign coal supplies of the United States to the extent of little more than one-fourth last year, the amount derived from other quarters besides England having been 345,330 tons. It is worthy of note that, although the population of the United States is now approaching that of France, the Americans import far less coal than the French. Thus, while 468,722 tons of coal were imported into the United States in 1867, the corresponding imports into France in the same year were 6,562,369 tons, although the French have made tolerably successful efforts during the last 10 or 15 years

to utilise the coal wealth which they undoubtedly possess. After all, however, the coal resources of France are probably small as compared with those of the United States.

THE MOSTYN COPPER COMPANY (Limited) v. HENDERSON.—A motion was made before Vice-Chancellor Gifford, on April 16, for an injunction to restrain an action at law. The plaintiffs are a limited company carrying on business at Mostyn, and the defendant, Mr. William Henderson, is the well-known patentee of various processes for the extraction of metal from their ores. The plaintiffs are working the defendant's processes under a license deed, and the Bill was filed to restrain him from proceeding with an action brought for recovery of royalties due, the plaintiffs contending that he had not, in accordance with the terms of the deed, duly sustained his patents against infringers. In a former action the question had been argued before the Court of Common Pleas, who had decided unanimously in the defendant's favour, and the plaintiffs now brought the matter into the Court of Chancery. Mr. Kay, Q.C., and Mr. Fischer appeared for the plaintiffs, and Mr. Grove, Q.C., Mr. Druce, Q.C., and Mr. F. O. Haynes for the defendant. The Vice-Chancellor said that no case had been made out for the interference of a Court of Equity, the construction of the deed was the same at law and in equity, the defendant was *bona fide* prosecuting a suit to restrain the Runcorn Soap and Alkali Company (Limited) from infringing his patents, and there was not a shadow of ground for saying that he had in any way failed or neglected to sustain his patents, and the motion must, therefore, be dismissed with costs.

MECHANICAL TREATMENT OF ORES, AND THE OBTAINING GOLD AND PRECIOUS STONES FROM ALLUVIAL DEPOSITS.—The experiments referred to in last week's Journal, relative to the treatment of various ores, precious stones, &c., were again made with Mr. Hunt's patent ore-separator and gold-washing machine, at Messrs. Harvey and Co.'s Foundry Wharf, Nine Elms, on Tuesday and Thursday (in the presence of gentlemen largely connected with matters relating to metals and minerals). The first day's experiment was chiefly confined to gold, and at the same time to show that the machine would separate precious stones from alluvial deposits, which was done by putting a ruby, a sapphire, and a topaz into a quantity of sand and gravel, passing it through the machine, when all the precious stones, although not large, were quickly found in the part where, from their specific gravity, they were expected to be. This, as well as the trial of the gold, was highly satisfactory, and had the precious stones in question been diamonds the result would have been the same, inasmuch as the specific gravity of all these is so nearly alike. On Thursday the experiments on mixed ores of copper, lead, blende, &c., were also most successfully accomplished. The separation of two minerals of nearly the same density, such as ordinary sulphide of copper and zinc (blende), Mr. Hunt does not profess to effect mechanically. In speaking of the various treatments of ore, it may not be out of place to state that it may so happen that the taking the heavier matter from the lighter, by washing, renders the latter of considerable commercial value. This fact was proved by Mr. Hunt some years since, at the Pontpierre Mines, in France, by his washing a decomposed ore, containing silver, and catching the muddy water in pits, which contained the silver in a very fine state of division, leaving the heavier matter poor in silver. Many hundreds of tons of this dried muddy argentiferous stuff was shipped at St. Malo for Swansea. We remark this to show how desirable it is that all matters connected with ore-dressing should be in the hands of experienced and competent men.

COAL-CUTTING BY MACHINERY.—In consequence of the stringency of the conditions laid down by the South Lancashire and Cheshire Coal Association, according to which no machine would become entitled to a prize unless of absolute practical value, the number of competitors has been too small to render a competitive trial possible; the Committee of the Association have, therefore, decided to remove the restrictions as to the use by members of the association of the successful machines free of royalty, to withdraw the money-prizes, and make the competition honorary, awarding gold, silver, and bronze medals for the first, second, and third best machines respectively.

THE WIGAN ENORMITIES.—The state of things now existing at Wigan possess a serious import. If the mob should be allowed to be successful, then a serious blow will be struck at all attempts to equalise the labour market, for turn-outs will be encouraged to oppose with equal violence the employment of all men who are ready to accept the wages which they reject. A great wrong will at the same time be done to industrious and thrifty artisans who are prepared to work for fair remuneration, and freedom of labour will be little more than a myth. Why should the hundreds of unemployed colliers in South Staffordshire, who are ready to work at Wigan for the money that the Lancashire men decline, be refused that protection from violence which they have a right to claim at the hands of the civil authorities, when they are simply going about their honest daily calling? We cannot but think that the authorities of Wigan have made a great mistake. Those of South Staffordshire acted very differently during the last great colliers' strike there. Colliery proprietors everywhere are intimately concerned in the issue, and the matter should receive the attention of the national association, of which most are members.

PREVENTION OF OVER-WINDING.—In the Supplement to this week's Journal will be found an illustrated description of an improved disconnecting link for preventing over-winding, invented by Mr. E. ORMEROD, foreman engineer at the Atherton Collieries, near Manchester, but it appears that since that description was written the locking-pin at the lower end of the plates has been slightly modified. Messrs. ORMEROD find it better to put the pin projecting through the outside plates, it being then less trouble to get the link out of the cylinder after the apparatus has been brought into play. The alteration removes the necessity for unscrewing the centre pin or stud. Messrs. FLETCHER, the proprietors of the collieries, have given Mr. ORMEROD a flattering testimonial to the efficiency of the invention; and only four days after the testimonial was given the value of the invention was practically proved. The engine-driver had left the engines in charge of the fireman, the fireman had given consent for a collier to try his hand at winding, and the collier, thinking the water-tank (for at this pit they wind their water at night) was at the bottom, started the engines accordingly, and ran into the pulley, but the link did its work well, and nothing serious occurred.

A DANGEROUS COAL MINE.—Mr. Samuel Scowcroft, proprietor of the Roschill Colliery, Bolton, was summoned before the magistrates for a breach of the Colliery Acts, in not providing sufficient ventilation and affording proper facilities for the workmen escaping danger.—Mr. Dickinson, Government Inspector of Mines for this district, visited defendant's pit, and found a state of things which, he said, greatly appalled him. There was a youth employed with a naked candle only four yards distant from the mouth of an old working, which was emitting gas in such quantities as actually to ignite when tested with his Davy lamp. At another part of the mine two men were working with naked candles, although the fire-damp was so great as to cause a halo or cap an inch in length over each light. On proceeding further he found himself immersed in an immense body of the dangerous fluid for a distance of 12 yards. All along this length his lamp showed that the fire-damp was highly explosive. There were 60 men working in the pit at the time, and had an explosion occurred many of them, it was alleged, must have been burned or suffocated.—The defence was that an accident had disarranged the ventilating apparatus, and thus occasioned the accumulation of gas.—The Bench fined Mr. Scowcroft 10*l.*, and costs for inadequate ventilation, and a further sum of 5*l.*, and costs for not providing sufficient places of refuge along the self-acting carriage tramway of the mine.

STEEL-HEADED RAILS.—Some very satisfactory experiments have been made on the Chicago and St. Louis (U.S.) Railroad, for testing the improved steel-headed rail invented by Mr. W. LEIGHTON, of Detroit. The party assembled first visited the Union Rolling Mills, where, under the direction of Mr. Robinson, the manager, the piles for the experimental rails were made, consisting of a V-piece of Bessemer steel about 7 in. in length, upon which was placed a saddle-piece of iron made to fit it, and upon these were piled other pieces of iron—five layers in all—forming a mass about 7 in. wide, by 8 high, and 7 ft. in length. In placing the pile in the furnace, the steel was placed downward to prevent its becoming so heated as to decarburise it. No artificial fluxes were added to promote the process of welding, and in about an hour the mass was removed from the furnace, passed through the rolls, and transformed into a perfect rail, from which several pieces were sawn as samples. A cross section of the rail was filed, and upon the application of nitric acid the steel was found to extend across the entire top of the rail, whilst the weld was scarcely perceptible. A large piece of the rail was then subjected to a crushing process between the jaws of an immense pair of shears, without starting in the least degree the steel from the iron. Still another test, and one which will far exceed in power any that can be applied to the rails in practice, was that of bending it. The rail was placed in the press and deflected 2½ in. from a straight line, in 18 in. in length, and bent back and forth three times, when the bent portion was cut off with the

shears, and no flaw whatever could be found in the welding. Mr. Leighton claims that his process of heating the pile prevents the decarburisation of the steel, by covering it with the V-shaped saddle, and placing the steel side down in the furnace, thus excluding it entirely from the flames. He also claims that the steel is made to pass around the head of the rail so as to form a perfect clamp, immovable from the rail even should the welding prove defective. The result of the experiments was that Mr. Leighton was requested to place some of the rails made in the hands of Mr. Galt, for a thorough test on the line of the Chicago and North Western Railroad.

MINING, METALS, AND MINERALS—PATENT MATTERS.

BY MICHAEL HENRY,

Patent Agent and Adviser, Memb. Soc. Arts, Assoc. Soc. Eng.

Mr. A. McDougall, of Manchester, has invented some improvements in the extraction and separation of the sulphur contained in products resulting from the alternate exposure of certain metallic oxides to gases containing sulphuretted hydrogen and to oxygen. The specification has been recently filed. From this document it appears that the chief feature of this invention is the employment of bi-sulphide of carbon, employed in a manner described in the after part of the specification, for the purpose of dissolving out sulphur from the products resulting from the alternate exposure of certain metallic oxides to gases containing sulphuretted hydrogen, and to oxygen. The bi-sulphide of carbon is separated and recovered by means of distillation from the dissolved sulphur. When the remaining oxide has been freed from the adhering solvent it can then be again used for the decomposition of sulphuretted hydrogen. The products upon which the patentee operates, by the agency of bi-sulphide of carbon, are the oxide of iron, and other metallic oxide, mixed with more or less free sulphur, the mixture being produced by the alternate exposure of the oxide to sulphuretted hydrogen and to oxygen, as is now usual in the manufacture and purification of ordinary gas in gasworks; and he specially remarks that a very important result is obtained from the application of his process, by the production of a renovated oxide of a new and superior character, free from impurities, and suited for being again used in the purification of gas with great advantage.

A specification has been filed by Mr. COLIN MATHER, of Manchester, of a patent relating to machinery for washing ores, wool, grain, and other mineral, vegetable, and animal substances. This machinery consists of an arrangement in which is employed a hollow cylinder, open at both ends, and placed in a slanting position. The interior of this cylinder is made with a worm and buckets, or lifters. The ore or other substance is fed in at the lower end of the cylinder, and a stream of water is admitted at the other, or higher, end. A slow rotary motion is communicated to the cylinder by steam or other power, and the action of the worm carries the ore, or other substance, from the lower to the higher end of the cylinder, where it is discharged. The combined action of the worm and buckets or lifters agitates the ore or other substance, and the water, in passing through the cylinder, removes the earthy and other foreign matters. In washing grain it is desirable to pass pieces of flint or other hard substances through the cylinder with the grain, in order to clean the interior of the cylinder. The end of the cylinder is perforated, to allow the grain to pass through the perforations, while the flints or hard substances are delivered at the end of the cylinder. The perforated end of the cylinder is also used to separate the smaller from the larger portions of the ore or other minerals.

A patent has been taken out by Mr. WM. BAKER, of Tipton, for the manufacture of iron. His description states that in conducting the puddling process according to this invention, the cast-iron to be puddled is introduced into the bed of the furnace without any admixture of hammer slag, or flux, but the hammer slag, or other flux, is put into the part of the furnace situated beyond the flue bridge, where it becomes melted simultaneously, or nearly so, with the iron in the bed of the furnace, but is separated from the said iron. The puddler stirs the iron with his rabble, or puddling tool, until the evolution of gas from the melted iron has ceased, or nearly so, when the melted hammer slag, or flux, is admitted to the bed of the furnace. The melted iron and melted hammer slag, or flux, are then mixed or worked together, and the puddling is completed in the ordinary way.

REPORT FROM SCOTLAND.

APRIL 22.—In the Pig-Iron market a considerable business has been done during the week; and, though prices rather receded, and again rallied, the variation only amounted to 1*d.* per ton either way. Were it not for the continued weekly importation of pretty large lots of pigs from Middlesbrough, our consumption for this year to date would have been increased by something like 25,000 tons; and, so long as Middlesbrough makers can offer their pigs at from 3*s.* to 4*s.* a ton under the current price of Scotch warrants—now that this English iron has gained a footing—so long will it successfully compete with Scotch iron in the Scotch market. Messrs. Gillan, Schmitz, and Co., of this city, seem so sure of the success of Middlesbrough iron in this quarter that they have just had launched an iron screw steamer, specially built for the trade, and fitted with steam winches, &c., for loading and unloading with rapidity. The Middlesbrough iron, when cast by itself, will not pass for Scotch iron with the experienced, but it does to mix with the latter in given proportions, without being detected. The shipments of pig-iron for the week just ended have been again augmented by the exports to British America, and were 15,330 tons, against 15,545 tons in the same week last year. The Canadian fleet this year numbered 35 vessels, of 30,035 tons, and coals and iron formed part of all their cargoes. To-day the only business reported was 2000 tons, at 52*s.* 6*d.* one month, closing buyers 52*s.* 3*d.* cash, and 52*s.* 6*d.* one month; sellers 1*d.* per ton higher. No. 1, g.m.b., 52*s.* 9*d.*; No. 3, 51*s.*; Coltness, No. 1, 57*s.* 6*d.*; Gartsherrie, 56*s.* 6*d.*; Langloan, 55*s.*; Glengarnock, 55*s.* Bar-iron is in demand to such an extent as to keep makers going from day to day; but, as formerly noticed, buyers have the turn of the market in their favour. For best brands the quotations are 7*l.*; second, ditto, 6*l.* 10*s.* to 6*l.* 15*s.*; nail rods, 7*l.* Shipbuilders having got a start, ship iron is not quite so much pressed for, and quotations are unchanged. Angle-iron, 7*l.* 2*s.* 6*d.* to 8*l.* 7*s.* 6*d.*; ship-plates, 7*l.* 17*s.* 6*d.* to 8*l.*; boiler-plates, 9*l.* to 17*l.* Ironfounders keep fairly employed. Gray's foundry, Airdrie, is to be offered for public sale on an early day; also the whole movable plant of the Gartness Iron and Steel Works, in the same locality.

Coals cannot be moved from the low quotation of 3*s.* 3*d.* a ton at the pit's mouth, or 5*s.* 3*d.* a ton f.o.b. in the Clyde, or at Port Dundas; in the Forth and at Troon they can also be shipped for the same money. The excessive depression which has overtaken this branch of our trade is felt in every mining district in Scotland, and the poor colliers, led off their feet by the most absurd and fanciful expedients, are now bewailing their condition in the columns of some of our local contemporaries. We regret much that among them "the cry of misery and the wail of distress is heard on every side," and surely this would not be a bad time for such sufferers to reflect on the impotence of their Trades Unions to lend them any real assistance in their time of need. The trade of the world cannot be bound by any fanciful conceits of Secretary McDonald; and when he is brought face to face with bitter distress, what has he to offer the poor miners but heartless upbraidings that they did not keep their Union so united as he advised. The oracle is a Delphic one, and turns on a pivot. Amongst the colliers a few recommend emigration as a panacea for present ills, some advocate a closer union amongst the brotherhood, others more idle days, but how will any, or all of these put together, give an impetus to the flagging wheels of trade? They have not yet hit the remedy, and to masters and men alike the sovereign remedy is patience—"Wait a little longer." Owing to the continuance of shipments of coal for Canada, and the dispatch of two or three cargoes to Aden, Port de Galle, &c., the returns show an increase on the corresponding week of last year, being 32,595 tons against 27,460 tons, the principal increase being at Grangemouth, Greenock, Ardrossan, and Troon. There are a number of mineral properties advertised for public and private sale, and to be let. For sale, minerals in lands near Stirling, amounting to about 650 acres; to be let, coal and iron in the estate of Easter Mossbat, Lanarkshire, and in Slamanman and Muiravonside parishes; also the plant of Burngrange Oil-Works, and lease of mineral field at West Calder.

The Clyde shipbuilders continue well employed, and although their joiners still remain out, not much inconvenience is being experienced

as yet. The Free Labour Society are sending down occasional men from London, and hands are dropping in from other quarters. The house trade being busy, on account of the usual bustle to get ready new buildings for the Whit-sunday term, the greater part of the looked-out men have been taken up, but after the term there will be surplus labour in the market, and then the pinch will be felt. The French Government are the reported purchasers of a saloon paddle-steamer, named the *Meg Merrilees*, which was built at the Pointhouse, on the Clyde, a couple of years ago, and which was only a short time in use. She is a very swift steamer, but we think it was considered at the time that her engines were too powerful for her hull. On her trial trip she acquitted herself nicely.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

APRIL 23.—There is now every reason to believe that the ironworks will soon be as fully in operation as the orders in hand will allow, and that no serious opposition will be offered to the reduction of wages. The men have gone in at several of the leading works at the reduction, and the result of the Conference at Stockton-on-Tees, on Tuesday and yesterday, was the offer to compromise the matter by a reduction of 5 per cent. The main object of the meeting, however, appears to have been to try to form a great national union of ironworkers, of which Mr. Kane is so earnest an advocate. The thin coal colliers are also accepting the reduced rate of wages. It is stated that a number of Bilston colliers have gone to South Wales to work in the pits where the men are on strike. There is no very great, though there is a partial, improvement in the demand for iron at the reduced rate of last quarter-day. The United States, however, are taking little, and the accounts from Australia are not favourable by this month's mail.

We understand that the two blast-furnaces and extensive colliery at Old Hill, Rowley Regis, the property of the late T. and J. Badger, have passed into the hands of Mr. David Rose, of the Albert Ironworks, Moxley, upon very easy terms, no doubt partly produced by the depressed state of the trade in the district, and from the desire of the trustees under the will of the late Messrs. Badger to wind-up these extensive concerns.

The failure of Mr. Alfred Barlow, who is engaged in large building contracts, is announced. The liabilities amount to 27,000*l.*, and the Midland Bank, which through its branch at Longton is a large creditor, is trying to effect an arrangement to enable him to complete his contracts, which are said to exceed 100,000*l.*

The Birmingham Chamber of Commerce has discussed Lord Cairn's Bankruptcy Bill, and, on the whole, look with favour on its provisions, as presenting an approximation to a just mode of dealing with debtors. There seems some tendency to go from one extreme to another, and to treat every man who cannot pay his debts with almost equal severity, however his misfortunes may have arisen, which would in time produce a reaction, as the present lax system does now.

The Derby Chamber of Commerce have unanimously petitioned Parliament to sanction the London and North Railway having an independent station in and access to that town.

REPORT FROM THE FOREST OF DEAN.

APRIL 22.—During the last fortnight the Coal Trade of the district has been very dull, and resulted in the discharge of several of the men employed at the collieries: there is now, however, more confidence between purchasers and the coal merchants, and trade, on the whole, seems to improve; but, as we anticipated in our last report, we do not expect the coal trade to be thoroughly revived until after the summer months. All the Iron Mines of consequence in this district are being worked with the usual activity; and, indeed, the fluctuations periodically felt at the coal mines but seldom affect iron mining. The blast-furnaces of the principal firms are in full work, and although a slight reduction on pig-iron may be anticipated, yet we are of opinion the masters here will hardly submit to it—at least, we trust they may not find it an absolute necessity to do so. It is generally rumoured, and we think there is too much of reason and truth in it not to believe it, that the furnace at Sedwley, the property of Messrs. Gould Brothers, is to be blown-out shortly; and, further, we hear that the men are all under notice to leave the works. The reason assigned is not to bad trade, but a want of proper materials for furnace operations, especially iron ore. This firm do not possess an iron mine of any value or importance, and we have always failed to see how smelting operations could be carried on profitably without this great desideratum—in fact, blast-furnaces, and smart erections attached, are altogether worthless without a constant supply of good ore to go into them.

The Bowson, or Great Western, Deep Colliery Company are still winding the water out of their shafts; but we hear that, at last, it is contemplated to put in pumps and erect a pumping-engine, but having two shafts already sunk they do not, it seems, mean to avail themselves of that circumstance, but intend, according to report, to sink another shaft down to a certain level, or the Churchway High Deep seam, but whether they really intend to do this or otherwise will only be discovered by watching their operations. We can only add that, in our opinion, there is no need whatever for spending more money on experimental schemes: it is now time to get about matters in a proper manner; but to do this successfully, the services of an experienced local man are required. If the company could see the wisdom of this they would be brought through their present difficulty at half the cost the work can be executed for under the present arrangements. We cannot hear that the Great Western Railway Company intend soon to open their Dean Forest Central Railway. This is a very great drawback to the spirit of progress here; we, however, think the line cannot lie in its present dormant state long.

REPORT FROM NORTHUMBERLAND AND DURHAM.

APRIL 23.—The Coal Trade continues extremely dull, with but little signs of any immediate improvement. Certainly a long period has elapsed since this trade was in the dormant state it has been in lately. However, a large fleet of light vessels from the South, and others, have arrived in the Tyne and other northern rivers during the last few days, and some increase in the amount of business may, of course, be expected. The price of coal has fallen lately considerably, and, in consequence, it is not improbable that the rate of wages may have to suffer also, but no notice of the kind has yet been given, and this disagreeable step will be avoided if possible. As a great portion of the men in Durham are already bound for one year, they are, at any rate, certain of the rates continuing for that time. The process of removing the water from the Tyneside Collieries is progressing steadily; the depth now attained at Wallsend is 55 fathoms, and the water has gone down in most of the Tyneside pits considerably. A drift is in course of formation from the new shaft at Wallsend to the old shaft. When this is completed, and pumps established in the new shaft, rapid progress will be made downwards again. A powerful Cornish pumping-engine is to be erected immediately at Hebburn, and this, of course, will materially aid this important operation, which now appears to be certain of completion within a reasonable time. The deep sinking is going on at the Felling below the Low Main seam, which has upon the Tyne been hitherto considered the lowest workable seam. The depth now arrived at below the celebrated Low Main seam is 50 fms., and it is intended to proceed 25 fathoms further. When this depth is reached it is expected that a good workable seam will be met with; and should this be realised, of which there is little doubt, the discovery must have an important bearing on the future prospect of the coal workings in the valley of the Tyne. An important discovery has also been made south of the Wear at Ferryhill, where a deep sinking has been going on some time, with, it was feared, little chance of success. However, the Harvey seam has been reached at a depth of a little over 100 fms., and it is of good quality, and also a good section, being 4 ft. 2 in. in thickness. This discovery has much improved the prospect for coal workings in that locality. The coal trade in Cumberland is also in a very depressed state, and the price of coal has fallen considerably lately. This unfortunate state of affairs has led to the proposal on the part of the owners of a reduction of 15 per cent. in the wages of the workmen. As this proposal is seriously entertained, it will most likely be determined upon, and the men, of course, are opposed to such a course, so that

there is a danger of the occurrence of strikes. The men have been very badly employed for some time there, and the proposed reduction still further depresses their spirits.

The case of Carr v. Benson has been again adjudicated upon, the decision formerly given having been reversed. The question to be decided was whether the appellant or the respondent had the right to work certain land at Scotswood. It appears that Mr. Benson purchased the lease of a colliery on the Scotswood estate from the Messrs. Carr, who held it under Lord Rokeby. Mr. Benson was to work all the coal seams that would pay, and in 1866 he began to work the stone coal seam, which he found was already being worked by Mr. Carr, for the purpose of getting clay for his works. It appears that Mr. Carr had reserved the right to him of working clay through the agency of drifts, but in this instance he had deepened an existing shaft. Lord Justice Wood said the evidence was very strong that the stone coal seam was workable to a profit; but, even if that were not the case, Vice-Chancellor Stuart had not given sufficient attention to the fact that Mr. Benson could even work the coal seam in connection with the fire-clay. The judgment, therefore, of the Vice-Chancellor must be reversed, and each party bear his own costs. But this remarkable case is not yet finished, for it is generally understood that Mr. Carr will now appeal to the House of Lords, with the hope that the last decision may be reversed.

There is nothing new to notice in connection with the Iron Trade. At the meeting at Middlesbrough, on Tuesday, the demand for coke and coal, and also for pig-iron, was flat, and prices are somewhat drooping in consequence. At the delegate meeting of ironworkers at Stockton, on Tuesday, it was resolved to form a united association.

REPORT FROM MONMOUTH AND SOUTH WALES.

APRIL 23.—It is gratifying to find that there are unmistakable symptoms of the depression which has prevailed for such a lengthened period passing away, and giving place to something like vitality, such as prevailed two or three years ago. There are more orders coming into the district, principally for rails for the United States and Russian markets, and in consequence some of the hands at two or three of the leading establishments are better employed than they have been for many months past. No actual improvement in prices has taken place, but the disinclination shown on the part of makers to enter into heavy engagements at the present time is an indication that there is a speedy prospect of an advance. Large quantities of rails are being shipped at the local ports to the United States and British colonies, and the exports for the present month will probably show an improvement. The orders from the United States continue to increase, and at the present time there is every prospect of a large amount of business being done with that country during the summer season. Although clearances of iron are being speedily made at freight rates somewhat remunerative, there is a scarcity of tonnage, and vessels are wanted to convey iron from the local ports to Cronstadt, Bahia, Dantzic, Annapolis, Bridgetown, Sackville, Woolville, Quebec, New Orleans, New York, and Montreal. Enquiries from the Russian markets continue favourable as to future requirements, and there is every prospect of clearances for the present season, showing a large increase over those of last year. Enquiries from the continental and other foreign markets are more numerous, and the prospect of enlarged operations at the various iron-making establishments in the district has caused such an air of cheerfulness to pervade the trade as has not been witnessed for a considerable time past. On home account the demand has not yet increased to any material extent, but it is quite evident the railway companies will shortly be making purchases with greater freedom than they have been for some time past, and this, no doubt, will be owing to the increased confidence of the public in railway securities. One or two of the leading companies are in the market for rails and other materials, and there is no doubt some large orders will be given out before long, as some hundreds of miles of permanent way require relaying. Pig-iron is being purchased a little more freely. Tin-plates are being largely purchased at full list prices, and the works, as a rule, are fully employed.

Steam coal proprietors are fairly placed for orders, principally for the mail-packet stations, Mediterranean ports, and French markets. The demand for the East has, however, slightly fallen off, where the colliers continue on strike, but the more favoured districts will, no doubt, experience a slight increase in the demand. It is to be regretted that the dispute between master and workman in some parts of South Wales, respecting the reduction of wages, is no nearer adjustment than at its commencement. In the Glamorganshire district some misunderstanding has arisen between the men themselves, those employed at the steam collieries having refused to co-operate with the house coal hands, by giving notice to leave, as had been previously arranged. A large meeting of the colliers has taken place on Penrhys Mountain, at which it was ascertained that the house coal miners, with the exception of a few, had given notice to be all out at the end of the present month, unless the old rate of wages was again paid, a step the steam coal hands had not adopted, as they had given the others to understand they would do. A resolution was come to that at one or two of the works the men should draw back their notices, and act as they thought best when the hands at other works were out; and the attention of both steam and house coal miners was called to the fact that there was a probability of having arbitration to settle disputes between master and workman, so as to bring to an end the present misunderstanding. In Monmouthshire, the men at Abercarn and Abertillery continue on strike, and it is now pretty certain that a large number will have to leave the district, as fresh hands are arriving almost daily from the Staffordshire and Cornish mining districts. On Tuesday about 150 colliers and bank-women arrived at the South Wales Colliery, Cwmillery, from Bliston, Staffordshire, they having engaged to work at the wages the Welsh colliers and bank-women refuse. On their arrival they were accosted by the "turn-outs," and owing to the representations made to the new comers, they at first refused to commence work, but what will be the result it is difficult to say. The notices given by the men in the eastern valleys expire this month, but it is generally believed that they will continue work on the masters' terms.

Mr. Thomas Jones, proprietor of the Tylacoch Colliery, Ystradgynaf, in the Rhondda Valley, has successfully crossed the 70-yard fault in that pit, and reached the Nine-foot seam on the west side of the fault, on the same level as the Four-foot seam on the east. The coal struck is of excellent quality, and the owner has already commenced shipping the same. It is estimated that when the whole of the workings are completed the outputs will not fall short of 700 tons per day. Operations are to be commenced by the Llynvi Iron and Coal Company for the working of the Blaen Llynvi Pit, near Maesteg, in the Llynvi Valley. The Aberaman Works, lately purchased by the Powell Duffryn Coal Company of Mr. Crawshaw Bailey, M.P., are now undergoing great alterations, with a view to conversion into tinworks.

At the Pontypridd Petty Sessions, on Wednesday, an important case was heard with reference to the working of collieries. Mr. Thomas Jones, proprietor of the Tylacoch Colliery, was summoned under the statute 25 and 26 Vic., c. 79, sec. 2, which forbids working in different seams, unless two shafts were constructed; and also forbids, in the case of one shaft, more than 20 men working at one time in the same seam. Mr. Jones was charged with having worked at one time in the same seam. Mr. Jones stated that some years ago Mr. Jones sunk to the Four-foot seam of coal at Tylacoch. The Nine-foot seam has lately been won, but there was no second shaft, in accordance with the statute. Mr. Jones might say that the workings were only the necessary preliminary to the erection of a shaft, but the Act had been infringed, inasmuch as more than 20 men were employed. Her Majesty's Inspector of Mines (Mr. Wales) had called Mr. Jones's attention to the matter on two separate occasions, but no notice appeared to have been taken of the warning, and the result was that an explosion took place, by which three men were killed. Mr. Jones contended strongly for a rigid observance of the regulations laid down for safely working mines, especially in that district, where so many lives were sacrificed. Mr. Thomas admitted that his client had violated the statute in so far as the special part of it was concerned, and he much regretted the consequences which had followed the neglect. Mr. Jones residing at Cardiff deprived him of the facilities for close supervision over his works, and many things might be done of which he was quite ignorant. All the provisions of the Act had now been fully complied with, and Mr. Jones threw himself on the leniency and consideration of the Bench. The defendant was also summoned under the 24 and 25 Vic., c. 151, sec. 10, which enacts that no person shall be employed in a mine unless he is a properly qualified person. The summons charged Mr. Jones with allowing safety-lamps to be used in the pit unlocked. Mr. Jones urged upon the Bench the great importance of this regulation being strictly observed, as it lay at the foundation of the safety of miners. There was a class of men to whom it was necessary to make it physically impossible to jeopardise their own and their fellow-workmen's lives. In this, as in the previous case, Mr. Jones said he was not instructed to press unduly, but Her Majesty's Inspector could not really overlook grave breaches of the Act. Mr. Thomas said there was a proper lamp station, and that a properly qualified lampman was retained. The instructions of this lampman were plain and unmistakable. There was no doubt Mr. Jones was liable for the acts of his subordinates. His absence from the colliery would account for any negligence that occurred. The Bench considered both cases very serious ones, and pointed out strongly the absolute necessity of proprietors complying with the terms of the statute. As this would probably act as a warning to Mr. Jones, he was fined for each offence £5., and costs.

It is in contemplation to present Mr. David Williams, engineer of the New Melin Tinworks, with a suitable testimonial, by the workmen of the

firm of Messrs. Leach, Flower, and Co., the proprietors of the establishment. Mr. Williams is greatly respected by all connected with the works, and there is no doubt the testimonial will be such as will be greatly prized by the recipient.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

APRIL 23.—There is little or no improvement to notice in the Coal and Iron Trades in the Chesterfield and Alfreton districts, both of which have been quiet for some time. Still, although the demand for merchant iron generally is only limited, yet most of the furnaces are kept in blast, so that stocks of pig are in no way diminished. In South Derbyshire the effects of the dispute which very recently terminated, after twelve months' duration, are gradually disappearing. At the Marquis of Hastings' Colliery, at Church Gresley, as well as at several others, including the Earl of Chesterfield's, &c., there is a slight improvement in the demand for coal. Still, with all the advantages enjoyed by the district, it will evidently take no inconsiderable time to recover the business lost by the attempt to introduce Union principles. There are a good many of the Unionists out of employ and in distress, as the coalowners are not willing to find work for them, seeing that they have no guarantee that an attempt would not be made to win the willing workmen from their allegiance, and to unsettle the neighbourhood again.

In several branches of the Sheffield trade, although there is nothing indicating activity, yet there is a more hopeful tone, the feeling being that business will gradually yet surely increase. There are some fair orders in hand for heavy steel goods and railway material generally. The lighter departments continue quiet. In the neighbourhood of Rotherham matters are improving, still some of the works are not altogether so fully going as could be wished. Higher up, at Milton and Elsecar, there appears to be plenty of work of every description, so that the locality, which suffered much in the early part of the year, has once more resumed its business-like and cheerful aspect. There is a good demand for rails, sheets, plates, and, in fact, for every description of merchant iron; and which, it would appear, is more likely to increase than otherwise. The foundries are by no means active, although there has been a trifle more doing of late in large pipes.

The South Yorkshire Coal Trade shows no signs of improvement, and nearly all the collieries continue to work short time. The business doing to London by the Great Northern Railway is very light, and the falling off in the revenue for mineral traffic during the last month or two must be something serious to the company. Notwithstanding that fact, however, up to Wednesday it was stated by the coalmasters that no intimation had been received from the directors in answer to the memorial presented to the board about a month ago requesting a reduction in the rate to London, although there had been a meeting of the board on Monday. That the present high rate is not only militating against the interests of the coalowners, but of the railway company as well, is patent to all persons connected with the trade, and the only wonder is that it has not been reduced some time since. As an instance of the operation of the company's rate, it may be stated that the charge of coal to Hull by water from the district, a distance of about 80 miles, has, with 1s. 5d. dues, not been more than 3s. 6d. per ton, whilst by rail it is rather more than 5s. The business doing with Hull has not been so good during the week, and as but few vessels have been going out there are a good many floating cargoes on the Humber. To Grimsby there is a moderate tonnage of steam coal being forwarded, and there is also a little more doing into Lancashire. In coke there is not much alteration, most of the furnaces being in blast, so that the demand upon makers remains tolerably good.

The proposed reduction of miners' wages to the extent of 5 per cent. has met with more opposition than was in the first instance anticipated, a result in a great measure owing to the want of cohesion on the part of the coalowners. It appears from the meeting of delegates, on Monday, that owners employing 4000 men had asked their men to submit to the reduction, whilst others employing 3000 hands had made no such request; intimating, however, that should the former succeed, their men would also have to submit to similar terms. The leading members of the Miners' Association, and the most intelligent of the workmen, are in favour of accepting the reduced terms. It is, therefore, expected that at the meeting on Monday next the delegates will agree to the moderate terms required, which appear to be imperative, not only from the depressed state of the trade, but from the reductions which have taken place at most of the coal districts in the kingdom, and where the wages paid are by no means so good as those received by the South Yorkshire miners.

PREVENTING SHAFT ACCIDENTS AND OVER-WINDING.



An improved apparatus, the invention of Mr. JOHN KING, of Pinxton, near Alfreton, Derbyshire, and of which the above is an engraving, has been adopted, and can now be seen in use, at Messrs. Coke and Co.'s Colliery, Pinxton. The apparatus is designed for the prevention alike of accidents, whether from the breakage of the winding-rope or from over-winding, and consists of two steel springs, four cast-iron toothed cams, with four wrought-iron arms, and a few links for connection only, the weight of which does not exceed 1 cwt., including hook for detaching the chair to prevent over-winding. The cams and springs are so placed as to be applicable to all drawing-shafts where wooden conductors are used without any alteration whatever. The time required for fixing this apparatus, which may be done in different ways to suit the various kind of chairs, is very tri-

ling, not more (in many cases) than a few hours, at a small cost for each chair. The inventor, with many of his supporters, including Her Majesty's Inspector of Mines for the district, mining engineers, and colliery managers (who have witnessed trials with empty and loaded chairs eight or nine times without the least hitch, or tendency to derangement) confidently recommended this contrivance as the simplest apparatus yet produced; so simple, that it is reasonably expected to remain in perfect working order as long as the chair is fit to draw coals; it may then be removed to another chair, for its action is so slight when drawing that the parts ought to wear out several chairs. Should any accidents happen to it, by coals falling down the shaft, or otherwise, the most careless observer, either bankman or enginemaster, must detect it on its first coming to bank. No expense in stores, or attention is needed to keep it in working order, other than keeping the chair top clean; for on the chair alighting at the bottom and top of the pit the springs are kept in order, as will be seen, when any slack is run off. The other day the manager went into the engine-house, and ordered the chair to be taken over the wheel; the chair rushed out of the pit-top and up to the ring, the chair was disengaged, and in a second the rope went over the wheel, leaving the chair securely supported on the conducting-rods. Amidst the great applause of the banksmen, the rope was attached, and the men at work again in 10 or 12 minutes, without any hitch whatever. When a rope breaks at a up-motion it does not fall at all; a down-motion would fall about 3 or 4 inches.

FOREIGN MINING AND METALLURGY.

The various Belgian coal basins display a decidedly downward tendency. In the Charleroi basin, which has, perhaps, suffered less than its neighbours, it has been practicable to renew considerable contracts only by granting reductions in prices. Coal for coke is a good deal offered; it may be obtained in the Centre basin at 8s. 6d. per ton; in the Charleroi district it is a little better supported. In the Liège basin the offers made are superior to the demand, and purchasers show a disinclination to conclude transactions because they hope to see fresh concessions made in prices. Coal for domestic consumption is supported with difficulty at 10s. 6d. per ton, while coal for industrial purposes varies between 8s. 10d. and 9s. 7d. per ton. In the basin of the Coudant de Mons the situation is more difficult than ever. Freight remains without variation. It appears that last month a new tariff was published by the royal direction of the Sambre-Scal Mines; this tariff presents a reduction upon almost all descriptions. There is not much to be said with reference to the Belgian metallurgical markets; symptoms of a revival of confidence and industry, which had stimulated the hopes of industrialists, have scarcely been sustained. A fall of 4s. per ton is noted in casting pig, which is dealt in at 3l. per ton; it is considered probable that this price will shortly become general. English pig has for some months past sustained a rude competition with Belgian; great efforts have been made by the owners of Belgian blast-furnaces to regain the ground lost, and these efforts are naturally reflected in sacrifices as regards the price. English makers have also resorted to low prices, and Brabant, Liège, and Antwerp works have purchased English pig at 2l. 18s., 2l. 12s., and even 2l. 11s. 6d. per ton, delivered. Notwithstanding English competition, however, it appears that MM. Cambier and Co., of La Louvière, have relighted one of their blast-furnaces for the production of casting pig. The principal forge-masters of the Liège group have had an interview with the Minister of Public Works in order to represent to him the injury occasioned to them by an order prohibiting the washing of minerals in the Meuse. Meetings are announced as follows:—Belgian Collieries Company, April 26, at Mons; Sardo-Belgian Mining and Metallurgical Company, April 29, at Liège; Boussu and Sainte-Croix-Sainte-Claire Collieries Company, April 29, at Brussels; Sars Longchamps and Bouvy Collieries Company, April 30, at St. Vaast; North of Charleroi Collieries Company, May 2, at Brussels; Sambre and Meuse Mines and Ironworks Company, May 4, at Brussels; Nederlandsche Mines and Foundries Company, May 4, at Brussels; Bonne Espérance Colliery Company, May 4, at Lambi; Bleyberg-es-Montzen Mines and Foundries Company, May 5, at Liège; Concordia Mines Company, May 7, at Oberhausen; Silesian Zinc Mines and Works Company, May 9, at Breslau; Royal Asturian Mining Company, May 11, at Brussels; Crachet and Ploegry Collieries Company, May 11, at Frameries; Caroline Mines Company, May 15, at Essen; and Gluck-Auf Mines Company, May 23, at Mulheim-aur-Kuhr.

Some orders of no great importance have arrived at the French works, but they have not materially changed the state of affairs, which remains somewhat difficult in all the groups. In the Haute-Marne prices have not experienced any variation, but their tendency is rather feeble. At St. Dizier, rolled iron from charcoal-made pig is quoted at 8l. 16s.; mixed ditto, at 8l. 4s. to 8l. 12s.; ditto, coke-made, 7l. to 7l. 4s. per ton. Hammered iron has made 8l. 8s. to 8l. 10s. per ton, and the ordinary machine iron, for chairs and points, 8l. to 8l. 4s. per ton. The iron trade of the Moselle is in a languishing state, and prices remain low. Contracts for rails for some small railways, which are to be constructed to unite detached forts round Metz, have been concluded at 7l. 8s. per ton, delivered on the spot. It appears from official tables that the imports of pig, free of duty, into France in the first two months of this year were 14,535 tons, as compared with 3832 tons in the corresponding period of 1867, while the imports of pig into France, on payment of duty, in the first two months of this year were 13,292 tons, as compared with 15,322 tons in the corresponding period of 1867. The total imports of pig into France in the first two months of this year were accordingly 19,421 tons, as compared with 22,214 tons in the corresponding period of 1867. The imports of iron and plates free of duty into France in the first two months of this year were 9185 tons, as compared with 6845 tons in the corresponding period of 1867. The imports of iron and plates into France on payment of duty in the first two months of this year were 824 tons, as compared with 1392 tons in the corresponding period of 1867. The total imports of iron and plates into France in the first two months of this year were accordingly 9709 tons, as compared with 8048 tons in the corresponding period of 1867. The imports into France of iron, &c., for shipbuilding purposes amounted in the first two months of this year to 1018 tons. In the whole of 1867 these imports were 5428 tons, and in the whole of 1866, 13,928 tons. The Carvin Company is applying for a self-acting coupon of 12s. for the manufacture of briquettes from its ordinary coal. It is stated that the Azule Company has purchased the Wiers Colliery. The coal of the department of the Nord and Belgium is arriving in considerable quantities in the Haute-Marne, where it finds an easy sale, notwithstanding the competition of the Sarre coal, which had hitherto preserved an almost exclusive monopoly of this market. There are complaints for the rest of the quality of the Sarre coal. The Bouches-du-Rhône Colliery Company will pay, May 1st, a yearly coupon of 12s. Meetings are announced as follows:—Société Nouvelle des Forges et Chantiers de la Moselle, née, April 28, at Paris; Cauchy-A-Tour Mines Company (Pas-de-Calais), April 28, at Lille; Hermès-Bockum Colliery Company, April 28, at Paris; Vienne Metallurgical Company (Limited), April 30, at Paris; Brassac Coal Mines Company, April 30, at Paris; Carvin Colliery Company, May 3, at Lille; Centre du Finistère Colliery Company, May 4, at Paris, &c.

On the French copper markets attention has been principally directed of late to Chilean; according to the last advices received from New York the next arrivals will not be very considerable, and under these circumstances it would not be very surprising if a fresh rise occurred in this description of copper. The tone of the German markets is good; the demand is regular, and quotations are firm. At Havre disposable Chilean in bars has made 77l. to 77l. 10s.; ditto to be delivered, 77l. 16s. to 78l. per ton. At Paris, Chilean in bars has made 77l.; ditto in ingots, 79l. 10s. to 80l.; and Corocoro minerals, 78l. per ton. At Marseilles, Taka has made 78l.; Spang, 76l.; refined Chilean and Peruvian, 87l. 12s.; rolled red copper for sheathing, 90l.; yellow ditto, 84l. per ton. The Dutch tin markets have recovered slightly from the state of surprise to which they were reduced by the unexpected result of the recent public sale; the strong upward movement which was recently observed is attributed to the fact that the Society of Commerce had refused offers at 55 fl. for a parcel of 40,990 ingots withdrawn from the late sale. The Dutch markets have now become more quiet, sales have been less active, and the article has slightly retrograded; Banca, dealt in at first at 56 fl. for a lot of 1000 ingots, has been since disposed of at 55½ fl. (a lot of 600 ingots changing hands on those terms); 2500 ingots of Billiton under sail have been also dealt in at 54½ fl. At Paris the demand for tin has been moderate, and prices have remained without any very great variation; Banca has made 98l. 10s. to 99l.; Straits, 98l.; and English, 98l. per ton. At Marseilles prices have been well supported, Banca making 96l., and English 98l. per ton. The article has been bought after the manner of the German markets, where it is quoted at an advance in some cases. There has been rather less firmness in lead at Marseilles, but at Paris prices have experienced no notable change. Transactions in zinc have lost animation at Breslau and Hamburg. On the Paris zinc market the tendency has also been towards feebleness, rough Silesian making 21l. 8s. per ton, and zinc from other sources 21l. 2s. per ton.

The nett profit realised in 1867 by the Eschweiler Mines and Foundries Company, after making various redemptions, was 40,865 thalers. Of this sum, 15 per cent. was applied to the reserve fund accumulated, and 4 per cent. (absorbing 34,000 thalers) to the 8500 shares of the second series, leaving 735 thalers to be carried forward. The dividend indicated was not paid in cash, but in obligations of 100 thalers each, bearing 6 per cent. interest from April 2, 1868, and redeemable April 2, 1878. In referring to Belgian topics, we should have noticed a statement that MM. de Borjone, of Acoz, have obtained a contract for 25,000 tons of rails for the Helmsingford and St. Petersburg Railway, at the rate of 6l. 17s. 5d. per ton. We shall probably be able to state next week whether this statement is authoritatively confirmed. As was indicated last week, great efforts are being made to push forward the Granollers and San Juan de Las Abadesas Railway. The company owning the line of railway from Barcelona to France, via Figueras, accords on its side the conveyance of the plant intended to be devoted to the construction of the Granollers and San Juan de Las Abadesas line, and cedes to it also half the tolls which may be collected from the first 750,000 tons of coal carried from Granollers to Barcelona. The two principal coal mining companies of the San Juan basin propose to grant to the concessionaire of the new line a fixed payment of 10 reals per ton of coal on the first 1,000,000 tons of coal conveyed over it, whatever may be the distance traversed; this is equivalent to a subvention of 100,000l.

NON-EXPLOSIVE GUNPOWDER.—The Government having decided upon making use of Dr. Gale's invention for rendering gunpowder non-explosive, it has been arranged that some experiments shall be made at the inventor's residence, Buckland-crescent, Belsize-park, this day (Saturday), for the purpose of testing specimens of the machinery to be erected at Purfleet, and elsewhere. The projected gunpowder to be used on this occasion has been specially prepared by the War Office, and forms a portion of that employed in the Martello Tower experiments of 1866.

TO COALMASTERS, AND OTHER CAPITALISTS. VALUABLE COLLIERY, COMPRISING SIX HUNDRED ACRES, IN NORTH STAFFORDSHIRE.

TO BE SOLD, OR LET ON LEASE, an EXTENSIVE COLLIERY, now in full operation, situate in the centre of the NORTH STAFFORDSHIRE COAL FIELD, and including the WHOLE of the SEAMS of COAL and IRONSTONE usually found in the POTTERY DISTRICT. The property consists of about 600 acres, and the colliery is in full working order, and doing an extensive business. The pumping and winding engines and other plant are of excellent construction, and in good repair; and a large extent of level driving and other dead work having been recently done, the output may be greatly increased. The situation is unusually eligible, being in close proximity to two of the pottery towns, and within a short distance of the Trent and Mersey Canal and the main line of the North Staffordshire Railway. For further particulars and to treat, apply to JOHN LANCASTER, Esq., Duffield Grange, Rugby; or to Messrs. KEARY and SON, solicitors, Stoke-upon-Trent, 6th April, 1868.

TO BE SOLD, BY PRIVATE TREATY, the WORKS of the Padeswood Oil Company (LIMITED), with LEASE of the PREMISES, situate near Padeswood Station on the Chester and Mold Railway, with siding from the London and North-Western Railway. The works are very compact, standing on about FOUR ACRES of LAND, and comprise SIX REVOLVING and TWELVE UPRIGHT RETORTS, complete, with all connections, &c.; FOUR STILLs, with tanks, agitators, and settling tanks in refinery, with pumps, &c. A good HOUSE, suitable for a manager, and a never-failing supply of water. For permission to view, and terms, apply to Messrs. LACE and Co., 1, Union Court, Liverpool; or to WILLIAM SEMPLE, Esq., Padeswood Oil Company, Mold. **IMPERIAL SILVER QUARRIES COMPANY (LIMITED).** Notice is hereby given, that sufficient capital having been subscribed for the present requirements of this company, NO MORE APPLICATIONS for SHARES will be RECEIVED. By order of the Directors, J. CHALMERS, Secretary, 113 and 114, Palmerston-buildings, Old Broad-street, E.C., 18th April, 1868.

Royal School of Mines, Jermyn-street.

DR. TYNDALL, F.R.S., will COMMENCE a COURSE of THIRTY-TWO LECTURES on MAGNETISM, ELECTRICITY, SOUND, LIGHT, and HEAT, at Three o'clock, on Monday, the 27th April, to be continued on every weekday but Saturday at the same hour. Fee for the course, 10s. TRENHAM REEKS, Registrar.

WHEAL EMILY SILVER MINING COMPANY. At a GENERAL MEETING of shareholders of the above company, holden at the Ship Hotel, Charing-cross, London, this 11th day of April, 1868, at Two o'clock. Present: H. W. WESTON, Chairman, Mr. DANIEL WINTLE, Miss LLOYD, Mr. JOHN DAVIES, Mr. WM. LOCKE (per his solicitor, Major ROSS). Mr. JOHN DAVIES moved, and Mr. WINTLE seconded—That Mr. H. W. Weston take the chair. Mr. Weston read the notice of meeting. Proxies were handed in from the following persons:—

600 shares—G. H. Beckhouse } Per Mr. H. W. Weston.
10 " —Joseph Martin }
15 " —Martha McMaster }
5 " —G. T. Cotham }
100 " —E. S. Ferguson }
10 " —Mary Glasspool, per Daniel Wintle. The conduct of the business having been fully discussed, and he not having attended this meeting, or produced the books of the company, and gone away from his home or lodgings without leaving any address, and having called a meeting on the mine, at Callington, in Cornwall, on the 9th inst., and induced shareholders to go from London to it, but never attending himself, Moved by Mr. WINTLE, and seconded by Mr. DAVIES, That Paul Rabey, the purser, be and he is hereby dismissed from the purser'ship, and that all books, papers, and documents belonging to the company be handed over to Mr. Weston forthwith. Moved by Mr. DAVIES, and seconded by Mr. WINTLE, That in case the said Paul Rabey should refuse to deliver up the books, as per previous resolution, Mr. Weston is hereby authorised to take such measures as he may deem necessary to obtain the same. That a committee, consisting of Mr. John Davies, Mr. H. W. Weston, and the Rev. G. T. Cotham be and is hereby appointed to examine the books and accounts of the purser, and report thereon to a subsequent meeting of the shareholders. Moved by Mr. DAVIES, and seconded by Mr. WINTLE, That John Rabey, the captain on the mine, having been requested to attend this meeting, and not having done so, resolved that he be and is hereby dismissed. (Signed) H. W. WESTON, Chairman, MARY GLASSPOOL (proxy for D. Wintle, 10 shares), ANN LLOYD, H. W. WESTON (proxy for 600 shares), DANIEL WINTLE, shares).

WHEAL EMILY SILVER MINING COMPANY. At a SPECIAL MEETING of the shareholders of the above company, holden at the Ship Hotel, Charing-cross, London, this 11th day of April, 1868, at half-past Two o'clock. Present: H. W. WESTON, Chairman, Mr. DANIEL WINTLE, Major ROSS, Mr. JOHN DAVIES, Miss LLOYD, Mr. JOHN DAVIES, Mr. WM. LOCKE (per his solicitor, Mr. Berry.). Mr. JOHN DAVIES moved, and Mr. WINTLE seconded, That Mr. H. W. Weston take the chair. Mr. Weston read the notice of meeting. Proxies were handed in from the following persons:—

600 shares—G. H. Beckhouse } Per Mr. H. W. Weston.
10 " —Joseph Martin }
15 " —Martha McMaster }
5 " —G. T. Cotham }
100 " —E. S. Ferguson }
10 " —Mary Glasspool, per D. Wintle. Mr. Weston, on behalf of Mr. Weston, the solicitor to the company, having explained to the meeting the position of the suit in Chancery against the lord, Mr. Langford, to compel specific performance of the agreement to grant the leases to Mr. John Davies and his co-adventurers, and that the costs were becoming of serious amount, without there being any funds to pay the same, It was moved by Mr. WINTLE, and seconded by Miss LLOYD, That the suit be abandoned, that Mr. Davies do dismiss his Bill forthwith, and withdraw all claims and leases. Moved by Mr. WINTLE, and seconded by Miss LLOYD, That the company be wound up forthwith. Moved by Mr. WINTLE, and seconded by Miss LLOYD, That Mr. John Davies, Mr. H. W. Weston, and the Rev. G. T. Cotham do audit the accounts of the purser, and do voluntarily wind-up the company forthwith. Moved by Mr. DAVIES, and seconded by Mrs. LOCKE, That the thanks of the meeting be given to Mr. Weston, the Chairman, for occupying the chair on this occasion. (Signed) H. W. WESTON, Chairman, MARY GLASSPOOL (proxy for JOHN DAVIES, D. Wintle, 10 shares), ANN LLOYD, H. W. WESTON (proxy for 600 shares), DANIEL WINTLE, shares).

STEAM-BOILERS made by WILLIAM WILSON, LILYBANK BOILER WORKS, GLASGOW, on the most improved principles, for home and export. All boiler work of the best material and workmanship, proved and warranted tight under a high pressure, and delivered at any railway station or shipping port in the kingdom at moderate rates. Lithograph of boilers forwarded post-free on application.

ESTABLISHED 1847.

H. STATHAM AND COMPANY, MANUFACTURERS OF EVERY DESCRIPTION OF INDIA RUBBER AND GUTTA PERCHA VALVES, &c., WASHERS, BUFFERS, HOSE PIPES, TUBING, STEAM PACKING, BELTING, BLASTING TUBE FOR NITRO-GLYCERINE POWDER. AIR AND WATER PROOF ARTICLES. To proprietors of mines, quarries, mills, railway and steamboat companies, and all large consumers, most advantageous terms are offered. ANY ARTICLE MADE TO SKETCH OR PATTERN. PRICE LISTS AND SAMPLES ON APPLICATION, 11, CORPORATION STREET, MANCHESTER; IRWELL WORKS, SALFORD.

THE SCIENTIFIC WONDER.

This INSTRUMENT has a CLEAR MAGNIFYING POWER of THIRTY-TWO THOUSAND TIMES, shows all KINDS of ANIMALCULES in WATER, CIRCULATION of the BLOOD, &c., &c., and is just the MICROSCOPE that every Surgeon, Dentist, Schoolmaster, Student, and Working Man should have. It is pronounced by the press (and all scientific men who have seen it) to be the best, cheapest, and most simple microscope ever invented. It has twenty times the power of the Coddington or Stanhope Microscope, and is twice as good as the celebrated Rae Microscope (which has been awarded so many prize medals), as may be inferred from the following letter received from Mr. Rae himself:—

To Mr. McCulloch, Philosophical Instrument Maker. Carlisle, December 12th, 1867.—SIR: Having seen some of your Diamond-Plate Lenses, I write to ask your terms for supplying me with the same per 20 gross, as I consider them superior to mine. RAE AND CO., Opticians, Carlisle.

I beg to inform the public that I have no agents anywhere, and all pretended agents are impostors. The above instrument can only be had from me, in Birmingham. Those at a distance who care for instruction and amusement, can have it safe and free by sample post, with book of full instructions, on receipt of 2s postage stamps. Samples sent abroad, two stamps extra. All persons wishing further particulars and testimonials, must send stamped and addressed envelope. ADDRESS—

A. MCCULLOCH, PHILOSOPHICAL INSTRUMENT MAKER, No. 18, BLUCHER STREET, BIRMINGHAM.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WHEAL UNITY CONSOLS MINING COMPANY.—The Registrar of this Court has appointed TUESDAY, the 5th day of May next, at the Registrar's Office, at Truro, to SETTLE the LIST of CONTRIBUTORIES of the ABOVE-NAMED COMPANY, now made out and deposited at the said office. Dated April 21, 1868. WM. MICHELL, Registrar of the said Court.

In Chancery.

BROOKS v. JONES.

FREEHOLD MINERAL PROPERTY, WITH IRONWORKS, IN THE COUNTY OF MONMOUTH.—FOR INVESTMENT.

MESSRS. FULLER, HORSEY, SON, AND CO. WILL SELL, BY AUCTION, at the Auction Mart, Tokenhouse-yard, London, on Thursday, the 7th day of May, 1868, at One o'clock precisely, in One Lot, by order of the High Court of Chancery, and with concurrence of his Lordship the Master of the Rolls, the Judge to whose Court the said Cause is attached, a very valuable FREEHOLD MINERAL PROPERTY, with BLAST FURNACES, KILNS, FOUNDRIES, ENGINE HOUSES, and BRIDGE HOUSES, known as THE BLAIND IRONWORKS,

Together with the Blaia Inn; Blaia House and grounds; Three Houses, for manager, surgeon, and cashier; Ninety-seven Houses for workmen; Shops and Schools at Blaia; a Station on the Western Valley line of the Monmouthshire Railway, about twenty miles from the shipping port of Newport, and in direct communication therewith; the total area being ninety-four acres, with eleven tons of coal of the aggregate thickness of 41 feet, and seven courses of rich ironstone.

Also, the LEASEHOLD INTEREST in TWO MINERAL PROPERTIES adjoining, known as TYR-AP-GETHING, and GWAIN GODWIN, having an area of 47A. 1R. 2P., let upon lease, together with MINERAL PROPERTIES known as CRAYCROFT and HENWAIN, which occupy an area of 84A. 3R. 3P., for a term which will expire on the 25th March, 1875, with power for the lessee to renew for a further term of 20 years, on giving two years previous notice, and subject to a surface rent of £650 per annum, and to certain royalties. Minimum royalty, £2000 per annum. Lessees to pay rates and taxes, to repair, to have at least one furnace in blast, and other covenants. From a survey made by Mr. Hedley, the eminent mining engineer, in December, 1865, he reports "that there are sufficient unworked minerals to secure the minimum royalties in perpetuity, and that the existing shafts are sufficient for working out the whole of the ironstone." This being so, and the quality of the minerals having been thoroughly ascertained and approved, this property may be recommended as a sound property for the investment of capital.

To be viewed till the sale by special order, which may be obtained of Messrs. J. and W. NORRIS and WOOD, solicitors, Manchester; or of the Auctioneers, 11, Billiter-square, London.

Printed particulars, with ground plans and sections of the minerals, may be had of the following solicitors:—Messrs. J. and W. NORRIS and WOOD, Manchester, the solicitors of the plaintiff; of Messrs. NORRIS and ALLEN, No. 20, Bedford-row, London; of Mr. J. NEEDHAM, No. 1, New-inn, Strand, London; of Messrs. CLARKE, WOODCOCK, and RYLAND, Lincoln's Inn-fields, London; of Messrs. MILLER and SMITH, No. 48, Watling-street, London; of Messrs. THOS. WHITE and SONS, No. 11, Bedford-row, aforesaid; of Messrs. CHILTON and Co., No. 25, Chancery-lane, London; of Messrs. BELL, BROADBENT, and Co., Bow Church-yard, London; of Mr. W. H. DUNN, No. 27, Chancery-lane, aforesaid; of Mr. WILLIAM THORNE, Messrs. CORSE and FOWLER, Thomas Bolton, and Messrs. H. and J. E. UNDERHILLS, Wolverhampton; of Messrs. DUGAN, LEWIS, and LEWIS, Walsall; of Mr. R. W. HAND, solicitor, Stafford; at the principal inns at Newport, Cardiff, Swansea, Gloucester, and Bristol; at the Midland Counties Herald office, Birmingham; at the Auction Mart and Estate Exchange, London; and of Messrs. FULLER, HORSEY, SON, and Co., No. 17, Billiter-square, London, E.C.

PLYM RIVER SLAB AND SLATE COMPANY, CANN QUARRY, DEVON.

VALUABLE STEAM ENGINES, CRUSHING MACHINES, PUMPING GEAR, STONE PLANING MACHINES, DRIVING BELTS, LARGE WATER WHEEL, RAILWAY TRUCKS, METALS, ROUND, SQUARE, AND FLAT IRON, CAST AND BLISTER STEEL, ROUND AND SQUARE TIMBER IN BALK, SMITHS' TOOLS, WORKED AND UNWORKED SLATE, TWO STANCH CART HORSES, HARNESS, &c., &c.

MESSRS. SKARDON AND SONS are instructed to SELL, BY AUCTION, on Tuesday, the 28th of April, 1868, and following days, at the works, the whole of the

MACHINERY AND MATERIALS lately used at the PLYM RIVER SLAB AND SLATE COMPANY, CANN QUARRY, DEVON, comprising a powerful stationary ENGINE, with winding gear, 14-horse portable ENGINE, planing machines, pumping gear, crushing machines, large water wheel, 60 feet in diameter, 6 feet breast, metal bearings, &c.; driving belts, railway metals, tram wagons, round, square, and flat iron, cast and blister steel, round and square timber in balk, railway sleepers, smiths' tools, large quantities of scrap iron, together with all the extensive stock of rough and worked slate in slabs, flooring, &c.; two stanch and useful cart horses, harness, &c., &c.; and the whole of which will be sold without reserve, and may be viewed the week prior to the sale, when catalogues will be ready for delivery. Sale to commence each day at Twelve o'clock. The whole of the above machinery and materials are advantageously placed for removal to Plymouth at the cost of 1s. per ton.

TO ENGINEERS, CONTRACTORS, BRIDGE AND GIRDER BUILDERS, BROKERS, AND OTHERS.

MOST IMPORTANT SALE OF ENGINEERS' AND CONTRACTORS' PLANT, &c.

MR. WHEATLEY KIRK is favoured with instructions from Messrs. Rankin, engineers and contractors, of Liverpool, to SELL, BY AUCTION, on Wednesday, the 29th of April instant, 1868, upon the premises of the works and yard, Mill-street, Ancoats, Manchester, in consequence of the completion of their contract of the new railway station, Bank Top, London-road, Manchester, all the

EXCEEDINGLY VALUABLE AND MODERN PLANT, lately used in the execution of the above contract, in capital condition, and nearly new, viz:—

ONE 20-horse high-pressure horizontal ENGINE. ONE 24-horse high-pressure CORNISH BOILER, one fire through. Large cast iron water tank, all the main shafting, gearing, gas meter, fittings, piping, &c.; Cook's patent (the Durham) double and single punching and shearing machines, by De Burge and others, some of heavy calibre; two strong geared wheel drilling machines; powerful lathe for turning columns, &c.; plate bending rolls, 4 ft. 11 in.; wrought iron smiths' hearths; portable ditto; rivet and angle iron heating furnaces; two cast iron straightening plates; one screw ditto; headstocks and gantry for planing ends of angle iron; portable screw bar straightening machine, on wheels; platform weighing machine, by Berrisford; overhead travelling crane; anvils, blockstroughs, wrought iron bogies, blocks, ropes, chains, pulleys, bolts, nuts, stores of various kinds, &c., and four new wrought iron girders (never been used).

Nearly the whole of the IRONWORK composing the old London Road Station, comprising rafters and struts of T iron, forged tie rails, suspension rods, and cast iron columns and girders, skylight frames, &c.—in all about 120 tons. Very strong and valuable complete travelling stage, for erecting of roofing over railway, clear of traffic, 80 ft. span, 27 ft. high, with platform, 20 ft. wide, on top, and framed portable derricks to work on ditto; and two smaller stages, complete. New timber in balk, planing, &c.; and all the erections, including mechanics' and carpenters' shops, with glazed fronts; main shed, covered with wood and felt; engine and boiler houses of brick, &c.

Full particulars in detailed catalogues, which may be had one week before the sale, of the auctioneer, 8, Essex-street, King-street, Manchester.

PERIODICAL SALES

(Established 1843)

OF ABSOLUTE and CONTINGENT REVERSIONS to FUNDED and OTHER PROPERTY, LIFE INTERESTS, ANNUITIES, POLICIES of ASSURANCE, ADVOWSONS, NEXT PRESENTATIONS, MANORIAL RIGHTS, RENT CHARGES, POST-OFFICE BONDS, DEBENTURES, SHARES in DOCKS, CANALS, MINES, RAILWAYS, INSURANCE COMPANIES, and other PUBLIC UNDERTAKINGS.

MR. MARSH begs to announce that his PERIODICAL SALES (established 1843) for the DISPOSAL of EVERY DESCRIPTION of the above-mentioned PROPERTY, take place on

THE FIRST THURSDAY IN EVERY MONTH. Auction, Land and Estate Agency Offices, 54, Cannon-street, London, E.C.

PRELIMINARY ADVERTISEMENT. **THE LOZANA PRIMERA LEAD SMELTING AND DESILVERISING WORKS.**

WILL SHORTLY BE OFFERED FOR SALE, the ABOVE WORKS (with LARGE COKE and ORE YARDS adjoining), situate at CARTHAGENA, in SPAIN.

This property, situate in the district of Santa Lucia, on the Bay of Carthage, and about half-a-mile from that city, on the high road to Santa Lucia, comprising smelting house, with condensing chamber and flue; desilverising house, with two sets of Pattinson pots; laboratories, cupola house, calcining furnaces, forge, steam engine and boilers, workmen's cottages, porter's lodge, courtyards, and land adjoining and covering in all 45,279 square metres, will be OFFERED FOR SALE, BY PUBLIC AUCTION, at an early date, at the office of the Senior Don BERNARDINO ALCARAZ, public notary, Carthage. Due notice will be given of the day fixed for the sale. Further particulars may be obtained of—

Mr. WILLIAM HENDERSON, Calle de Palas, Carthage; Mr. G. M. UNDERDOWN (care of Messrs. J. Bell and Co.), Madrid; and Messrs. HARDING, WHITNEY, GIBBONS, and Co., 8, Old Jewry, London.

TO BE SOLD.—A FIRST-CLASS NEW 14-horse power PORTABLE STEAM-ENGINE, with all recent improvements. Several GOOD SECOND-HAND PORTABLES to BE SOLD, CHEAP. Apply to T. W. BARROWS, Engineer, Banbury.

Contract for Coals for Shanghai.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland do hereby give notice that on TUESDAY, the 12th May next, at Two o'clock, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING and DELIVERING into store on shore or on board Her Majesty's steamships and vessels at Shanghai.

TWO THOUSAND TONS OF SMOKELESS SOUTH WALES COALS, fit for the service of Her Majesty's steamships and vessels. One-half of the coals to be shipped by the 30th June, and the remainder by the 31st July next.

A form of the tender and conditions of contract may be seen in the lobby of the Storekeeper-General's Department, Admiralty, Somerset House. No tender will be received after Two o'clock on the day of treaty, nor will any be noticed unless the party attends, or an agent for him duly authorised in writing. Every tender must be addressed to the Secretary of the Admiralty, and bear in the left-hand corner the words "Tender for Coals for Shanghai," and must also be delivered at the Department of the Storekeeper-General, Admiralty, Somerset House, accompanied by a letter signed by two responsible persons, engaging to become bound with the person tendering in the sum of £25 per cent. on the value for the due performance of the contract.

By order, ANTONIO BRADY, Registrar of Contracts and Public Securities. Contract Department, Admiralty, Somerset House, 24th April, 1868.

Contract for Coals for Her Majesty's Dockyards,

Victualling Yards, &c.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland do hereby give notice that on TUESDAY, the 5th May next, at Two o'clock, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING Her Majesty's Dockyards, Victualling Yards, Naval Hospitals, Royal Marine Barracks, and Infirmaries, and the Admiralty, Marine, and Coast Guard offices in London, with

COALS.

A form of the tender, with a distribution of the coals, and conditions of contract, may be obtained at the above department.

No tender will be received after Two o'clock on the day of treaty, nor will any be noticed unless the party attends, or an agent for him duly authorised in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear in the left-hand corner the words "Tender for Coals," and must also be delivered at the Department of the Storekeeper-General, Admiralty, Somerset House, accompanied by a letter signed by two responsible persons, engaging to become bound with the person tendering in the sum of £20 per 100 tons for the due performance of the contract.

By order, ANTONIO BRADY, Registrar of Contracts and Public Securities. Contract Department, Admiralty, Somerset House, April 8, 1868.

Contract for Coals for Jellah Coffee, Bight of Benin.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland do hereby give notice that, on TUESDAY, the 5th of May next, at Two o'clock, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING and DELIVERING on board Her Majesty's ship Victrolite coal depot, at Jellah Coffee, Bight of Benin,

ONE THOUSAND TONS OF SMOKELESS SOUTH WALES COALS,

Fit for the service of Her Majesty's steamships and vessels.

One-half of the coals to be shipped in the month of May, and the remainder in the month of July next.

A form of the tender and conditions of contract may be seen in the lobby of the Storekeeper-General's Department, Admiralty, Somerset House. No tender will be received after Two o'clock on the day of treaty, nor will any be noticed unless the party attends, or an agent for him duly authorised in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear in the left-hand corner the words "Tender for Coals for Jellah Coffee," and must also be delivered at the Department of the Storekeeper-General, Admiralty, Somerset House, accompanied by a letter signed by two responsible persons, engaging to become bound with the person tendering in the sum of £25 per cent. on the value for the due performance of the contract.

By order, ANTONIO BRADY, Registrar of Contracts and Public Securities. Contract Department, Admiralty, Somerset House, April 15, 1868.

Contract for British Iron.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland do hereby give notice that on TUESDAY, the 12th May next, at Two o'clock, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING and DELIVERING into store at Her Majesty's several Dockyards all such quantities of

BRITISH IRON,

Class D (thin plate or sheet), as may from time to time be ordered under a contract for twelve months certain, and further until the expiration of three months' warning.

The average annual consumption may be ascertained, and a form of the tender, including a schedule of the iron and conditions of the contract, may be obtained on application at this department. No tender will be received after Two o'clock on the day of treaty, nor will any be noticed unless the party attends, or an agent for him duly authorised in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear in the left-hand corner the words "Tender for British Iron, Class D," and must also be delivered at the Department of the Storekeeper-General, Admiralty, Somerset House, accompanied by a letter signed by two responsible persons, engaging to become bound with the person tendering in the sum of £500 for the due performance of the contract.

By order, ANTONIO BRADY, Registrar of Contracts and Public Securities. Contract Department, Admiralty, Somerset House, 22d April, 1868.

Contract for Best Swedish Iron.

BY ORDER OF THE SECRETARY OF STATE FOR INDIA IN COUNCIL.

NOTICE IS HEREBY GIVEN that the DIRECTOR-GENERAL OF STORES FOR INDIA, will be READY on or before Monday, the 27th April, to RECEIVE PROPOSALS in writing, sealed up, from such persons as may be willing to SUPPLY—

BEST SWEDISH IRON.

And that the conditions of the said contract may be had on application, addressed to the Director-General of Stores, India Office, Westminster, S.W., where the proposals are to be left any time before Two o'clock P.M. of the said 27th April, 1868, after which hour no tender will be received.

India Office, April 18, 1868. GERALD C. TALBOT, Director-General.

AMERICAN MINES.

MR. R. P. ROTHWELL, Mining Engineer and Metallurgist, OFFICE—WILKES-BARRE, PENNSYLVANIA, U.S., Having a LARGE EXPERIENCE in EUROPEAN and AMERICAN MINES, can FURNISH RELIABLE INFORMATION on the VALUE of MINERAL PROPERTY in any part of the UNITED STATES or the dominion of CANADA.

ENGINES AND BOILERS FOR SALE.

MESSRS. NICHOLLS, MATHEWS, AND CO. have FOR SALE ENGINES of VARIOUS SORTS and SIZES, and SEVERAL GOOD TEN TON BOILERS. All are in excellent condition, and well worthy the attention of purchasers.

Full particulars may be obtained by applying to Messrs. NICHOLLS, MATHEWS, and Co., Bedford Ironworks, Tavistock.

ANALYSES, ASSAYS, AND CHEMICAL INVESTIGATIONS, OF ALL DESCRIPTIONS, ARE UNDERTAKEN BY A. NORMAN TATE, F.R.S., &c., ANALYTICAL and CONSULTING CHEMIST, and CHEMICAL ENGINEER (Author of "Petroleum and Its Products," "The Manufacture of Caustic Soda," and other Chemical Memoirs), 15, NEWSTEAD ROAD, SMITHDOWN ROAD, LIVERPOOL.

Mr. TATE, who has had many years practical experience in the erection and management of extensive chemical manufactories, and oil distilleries and refineries, also offers his services to those who may require PLANS, ESTIMATES, &c., for CHEMICAL WORKS, OIL DISTILLERIES and REFINERIES, and other MANUFACTORIES in which CHEMICAL PROCESSES are CONDUCTED.

The SUPERINTENDENCE of the ERECTION of WORKS or of MANUFACTURING PROCESSES.

The VALUATION of WORKS. The EXAMINATION of PATENTS, NEW PROCESSES or APPARATUS connected with CHEMICAL MANUFACTURES.

ASSAY OFFICE AND LABORATORY, No. 2, CROWN CHAMBERS, CROWN COURT, THREED NEEDLE STREET, CONDUCTED BY W. T. RICKARD, F.C.S., &c. (Late MITCHELL and RICKARD).

Assays and analyses of every description of mineral and other substances, manures, &c. Gentlemen going abroad for mining purposes instructed in assaying, and the most improved methods of reducing gold, silver, and other metals. MINING PROPERTIES INSPECTED AND REPORTED ON.

RAILWAY WAGON WORKS, BARNSELY
MESSRS. G. W. AND T. CRAIK
 ARE PREPARED TO
 SUPPLY COAL AND COKE WAGONS
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 Either for cash, or by preferred payments through wagon-leasing companies.
 WAGONS PROMPTLY REPAIRED.

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MANUFACTURERS OF RAILWAY WAGONS, WHEELS
 AXLES, LORRIES, CARTS, WOOD WHEELS, &c.,
 IRONWORKS, BEVERLEY, YORKSHIRE.

THE RAILWAY SPRING COMPANY (LIMITED),
 DIAL WORKS, WEST BROMWICH,
 MANUFACTURERS OF
 RAILWAY, WAGON, AND CARRIAGE SPRINGS.
 Orders executed with the utmost dispatch, of first-rate quality,
 and on moderate terms.

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COLLIERIES.

HENRY HUGHES AND CO., FALCON WORKS,
 LOUGHBOROUGH, have ALWAYS IN PROGRESS, and can SUPPLY
 at short notice, TANK ENGINES to suit any gauge of railway and gradients
 from 1 in 16.

THOMAS EDINGTON AND SONS,
 PHENIX IRONWORKS, GLASGOW,

MANUFACTURERS OF ALL KINDS OF GAS AND WATER
 PIPES, BRANCHES, BENDS, WATER-TRAPS, TANK-PLATES,
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ALSO,
 RAILWAY CHAIRS AND SLEEPERS, AND GRIFFIN'S PATENT
 PERMANENT WAY.
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MANUFACTURERS OF BLACK GREASE
 FOR COLLIERY WIRE ROPES, TRAMS, WAGONS, &c., £5 PER TON
 TORCH AND LAMP OIL, 1s. PER GALLON (Casks free).
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MESSRS. WESTON AND COLLINGBORN SOLICIT ORDERS
 for SOFT PIG LEAD, which they are producing of the very best quality.
 Prices on application.
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GREEN SLATES OF ANY SIZE, and of the CHOICEST
 COLOUR and QUALITY, can now be OBTAINED from the DOROTHEA
 WEST SLATE COMPANY (LIMITED), CARNARVON.
 The "CHURING CROSS HOTEL," "STAR AND GARTER HOTEL" (Richmond),
 "LONDON-BRIDGE HOTEL," and many other public buildings, are covered with
 these elegant slates.
 Orders will be executed in regular succession.
 Apply to Mr. THOMAS HARVEY, General Manager, 9, Segontium-terrace, Car-
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PEACOCK AND BUCHAN'S COMPOSITIONS.
 Nos. 1 and 2 for SHIPS' BOTTOMS; 3 and 4 for RAILWAY AND
 MINING PLANT, &c.

FROM P. J. MARGERY, ESQ., C.E., ENGINEER OF THE SOUTH DEVON RAIL-
 WAY COMPANY.

South Devon Railway Engineer's Office, Dawlish, Sept. 23, 1865.
 I have extensively used Messrs. Peacock and Buchan's No. 3 paint or com-
 position, on the viaducts and bridges of the South Devon Railway, and I consider
 it to be a paint of very good qualities, and that two coats of it are equal to three
 other paints; also that its durability is greater.
 (Signed) P. J. MARGERY, Engineer S.D.R., M.I.C.E.

N.B.—The South Devon Railway Company have continued to use it, and are
 now painting their stations with it.—February, 1868.

EXTRACT OF A LETTER FROM EDWARD WOODS, ESQ., C.E.
 3, Storey Gate, Westminster.
 DEAR SIR,—Please prepare 6 cwt. of your composition for preserving timber:
 put up in strong wooden casks, to go round the Horn for the Coplapo Railway
 Company. Believe me, yours truly,
 Capt. George Peacock. (Signed) EDWARD WOODS.
 For price, &c., apply to—
 PEACOCK AND BUCHAN, SOUTHAMPTON.

JOHN AND EDWIN WRIGHT,
 PATENTERS.
 (ESTABLISHED 1770.)
 MANUFACTURERS OF EVERY DESCRIPTION OF
 IMPROVED

PATENT FLAT AND ROUND WIRE ROPES,
 From the very best quality of charcoal iron and steel wire.

PATENT FLAT AND ROUND HEMP ROPES.

SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CON-
DUCTORS, STEAM PLOUGH ROPES (made from Webster and Horsfall's
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UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.
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Swan Rope Works.

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 CHAPEL STREET, LIVERPOOL.
 MANUFACTURERS OF FLAT AND ROUND HEMP AND IRON AND STEEL
 WIRE ROPES FOR MINING, RAILWAY, AND SHIPPING PURPOSES.
 MANILLA ROPE OF SUPERIOR QUALITY, FIFTY PER CENT. STRONGER
 AND THIRTY PER CENT. CHEAPER than Russian hemp rope.
 WIRE ROPE OF FIRST QUALITY WIRE, and the HIGHEST STANDARD
 OF STRENGTH.

Just published, cloth gilt, 10s. 6d.,

THE GEOLOGICAL ATLAS OF GREAT BRITAIN.
MAPS OF THE COUNTIES AND DISTRICTS, geologically
 coloured, from the GOVERNMENT SURVEYS, with valuable GEOLO-
 GICAL and MINERALOGICAL INFORMATION.
 London: JAMES REYNOLDS, 174, Strand.

The price of
"THE HAUNTS AND HOMES OF CORNISHMEN,"
 By the late Mr. I. T. TREGELLAS,
 Reviewed in the MINING JOURNAL of March 28, is 4s. 6d.; free by post on receipt
 of 4s. 10d. worth of postage stamps.
 J. R. NETHERTON, publisher, Truro.

EXTENSION OF MINING MANUFACTURES.

MINING.—TO ENGINEERS, &c., desirous of introducing
 their MANUFACTURES into the MINING DISTRICTS OF AUSTRALIA,
 TASMANIA, and NEW ZEALAND, the "AUSTRALASIAN," from its exten-
 sive circulation (13,000 weekly) offers unusual facilities,—ably reporting all
 News of Interest from the various Mines, the Lists of Dividends and Calls,
 Mining Notes and Improvements in Mining Machinery, &c., &c.
 Advertisements can be sent to G. STREET'S Indian, Foreign, and Colonial
 Newspaper Offices, 30, Cornhill, where every information may be obtained.

CARLISLE BISCUIT COMPANY.—WHOLESALE AND
EXPORT BISCUIT MANUFACTURERS, CARLISLE, & 56, CITY ROAD,
LONDON. For twenty years their biscuits have maintained a high reputation.
 For export they are specially prepared, so as to keep in any climate. To whom
 buyers a liberal discount is allowed. Price lists forwarded on application.

MEAT BISCUITS FOR DOGS.
COMPANY, is undoubtedly the best and cheapest food for dogs that has
 ever been introduced. It is equally adapted for sporting dogs, yard dogs, or for
 pets. It requires no cooking, and, without any other food, keeps dogs in the
 highest condition. Many of the prize-taking dogs at the last Birmingham show
 were fed, from puppies, on this biscuit. Price 20s. per cwt. at Carlisle; or at
 their depot, 56, City-road, London, 22s. per cwt. Post-office orders payable to
 WILLIAM SLATER, Carlisle. Sold by corn chandlers everywhere. Book of tes-
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 WILLIAM SLATER, Managing Director.

NICHOLLS, MATHEWS, AND CO., ENGINEERS,
 BEDFORD IRONWORKS, TAVISTOCK.
MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION, made
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 attention of the public to the MANUFACTURE of our BOILERS, which have
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 EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and
 HEAVY SHAFTS OF ANY SIZE. CHAINS made of the best iron, and war-
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 ALL ORDERS FOR ABROAD RECEIVE their BEST ATTENTION.
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 chinery to foreign mines, and selecting experienced workmen to erect the same,
 where required.
 Messrs. NICHOLLS, MATHEWS, and Co. have always a LARGE STOCK of
 SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

WILLIAMS'S PERRAN FOUNDRY COMPANY,
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MANUFACTURERS OF STEAM PUMPING AND EVERY OTHER KIND OF
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 Passenger carriages and wagons built, either for cash or for payment
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THE BIRMINGHAM WAGON COMPANY (LIMITED)
MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, for
HIRE and SALE, by immediate or deferred payments. They have also wagons
 for hire capable of carrying 6, 8, and 10 tons, part of which are constructed
 specially for shipping purposes. Wagons in working order maintained by contract.
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STAFFORDSHIRE WHEEL AND AXLE COMPANY
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MANUFACTURERS OF RAILWAY CARRIAGE, WAGON, and CONTRAC-
TORS' WHEELS and AXLES, and other IRONWORK used in the CON-
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COAL CUTTING MACHINERY.—
 The WEST ARDSLEY COMPANY having, by recently patented improve-
 ments, perfected their coal cutting machinery, worked by compressed air, are
 NOW READY TO MAKE CONTRACTS for the CONSTRUCTION and USE of
 their MACHINES.

The results of twelve months' experience in the working of these machines, by
 the West Ardsley Company, have proved most satisfactory, their use being found
 to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to
 LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION
 of the MINE.
 All communications to be made to Messrs. FIRTH, DONISTHORPE, and BOWEN,
 No. 8, Britannia-street, Leeds.

NOTICE.—The WEST ARDSLEY COMPANY, having reason
 to believe that their patents are being infringed upon, hereby give notice
 that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES
 who may MAKE FOR SALE, or USE ANY MACHINERY in the construction
 of which any such INFRINGEMENT is MADE.

WILTON'S MATHEMATICAL INSTRUMENT ESTABLISHMENT REMOVED
 from St. Day to A. JEFFERY'S, CAMBORNE.

W. H. WILTON begs to thank his friends for their very liberal support for
 so many years, and informs them that he has now declined business in England
 in favour solely of Mr. A. JEFFERY, MATHEMATICAL INSTRUMENT
 MAKER, CAMBORNE, whom he considers (having been an assistant to his
 father for several years) is in every way capable of creditably maintaining the
 good name universally awarded to Wilton's instruments.

A. JEFFERY

Respectfully begs to inform Mine Managers, Surveyors, Engineers, &c., that
 having purchased Mr. Wilton's business, and the very valuable acquisitions and
 appliances belonging thereto, he has enlarged his Mathematical Instrument
 Manufacture, and is prepared to supply THEODOLITES, DIALS, POCKET DIALS,
 LEVELS, TRAVERSING AND PLAIN PROTRACTORS, CASES OF DRAWING INSTRUMENTS,
 MEASURING CHAINS AND TAPES, ASSAYERS' SCALES AND WEIGHTS, EN-
 GINE COUNTERS, and, in short, every description of Instruments used by SUR-
 VEYING, MEASURING, MAPPING, &c.
 Repairing in all its branches promptly attended to.

CREASE'S NEW AND
IMPROVED PNEUMATIC TUNNELLING ENGINE.

THE PROPRIETORS of this INVENTION, in order to
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 OPEN TO TAKE CONTRACTS for DRIVING LEVELS.
 Preference will be given to ADIT LEVELS and those places where ROPE-
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 Address—E. S. CREASE, 7, Hog-street, Plymouth.

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Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at
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 EXHIBITION," in Dublin, 1855; and at the "UNIVERSAL EXPOSITION,"
 in Paris, 1867.



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 of TUCKINGMILL, CORNWALL, MANUFAC-
 TURERS OF PATENT SAFETY-FUSE, having been in-
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 fuse not of their manufacture, beg to call the attention of
 the trade and public to the following announcement:—
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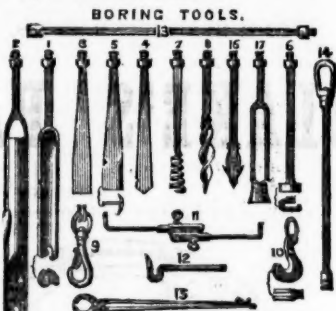
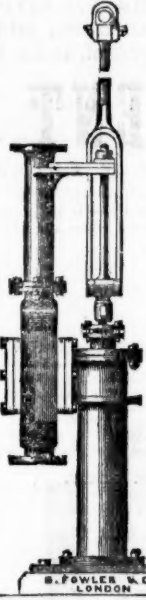
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THIS MACHINE, with the latest improvements, will be found
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 Testimonials of the highest character, and all other information, can be ob-
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 N.B.—A Working Model of the Machine can be seen at the South Kensington
 Museum for Patents; and also at Messrs. HARVEY and Co.'s Foundry Wharf,
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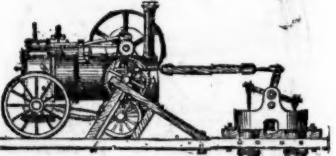
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This powerful BLASTING AGENT will not explode from a spark, or concus-
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 holes, or under water.
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 ever discovered.

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THE EXPLOSIVE FORCE of this BLASTING OIL is TEN
TIMES that of GUNPOWDER, and the ECONOMY and SAVING IN
TIME, LABOUR, and COST in removing granite and hard rock, in sinking
 shafts, driving tunnels, and opening forward in close dens is immense.

It will not explode from a spark or fire, but from concussion alone, and is con-
 sequently much less dangerous than gunpowder or gun-cotton.

Being heavier than water it sinks to the bottom of a wet hole, no other tam-
 ping than water being required.

One charge of this blasting oil, which is now being used with wonderful effect
 in all the largest slate quarries in North Wales, will displace as much slate rock
 as four or five charges of gunpowder; and its great force, acting on a large
 quantity of good slate rock, shakes and displaces it at the natural joints, or
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 This invaluable quarrying agent may now be obtained from Messrs. WEBB
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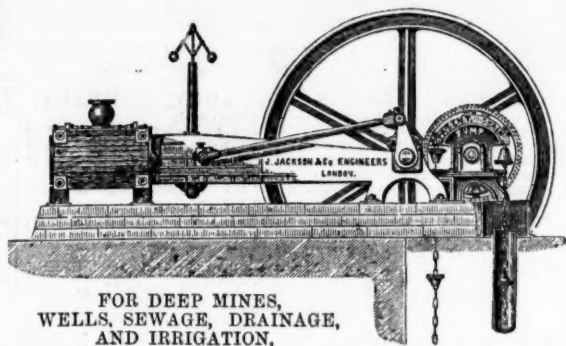
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The Bastier Pump is now used throughout England—sizes varying from 2½ to 15 inches diameter, and up to 300 feet deep.

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FOR DEEP MINES,
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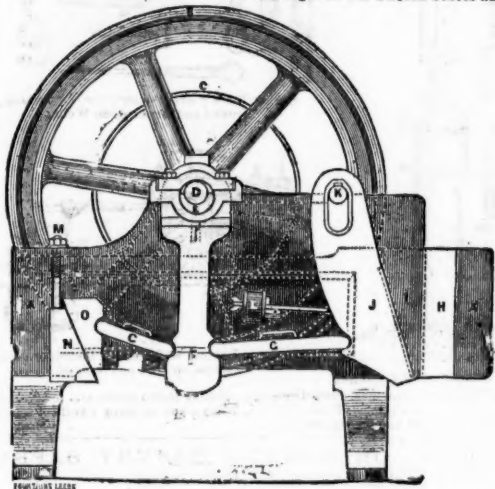
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OR ORE CRUSHING MACHINE,

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—



The Parys Mines Company, Parys Mines, near Bangor, June 6.—We have had one of your stone breakers in use during the last twelve months, and Captain Moreton reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour. For the Parys Mining Company, JAMES WILLIAMS.

H. R. Marsden, Esq.

Eaton Emery Works, Manchester.—We have used Blake's patent stone breaker made by you, for the last 12 months, crushing emery, &c., and it has given every satisfaction. Some time after starting the machine a piece of the moveable jaw about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of the machine to the size fixed for crushing the emery. H. R. Marsden, Esq. THOS. GOLDSWORTHY & SONS.

Alkali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent. WILLIAM HUNT.

Welsh Gold Mining Company, Dolgelly.—The stone breaker does its work admirably, crushing the hardest stones and quartz. WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes, for fine road metal, free from dust. Messrs. ORD and MADISON, Stone and Lime Merchants, Darlington.

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MEADOW LANE, LEEDS,

ONLY MAKER IN THE UNITED KINGDOM.

CAUTION!

BLAKE'S PATENT STONE BREAKER,

In Chancery.

BLAKE v. ARCHER, NOVEMBER 12, 1867.

His Honour the Vice-Chancellor WOOD having found a VERDICT in FAVOUR of the PLAINTIFFS in the above Cause, establishing the VALIDITY of BLAKE'S PATENT, and made a DECREE for an INJUNCTION to RESTRAIN the DEFENDANTS, Messrs. THOMAS ARCHER and SON, of Dunston Engine-Works, near Gateshead-on-Tyne, from INFRINGING such PATENT, and ordering them to pay to the Plaintiffs the costs of the Suit.

ALL PERSONS are hereby CAUTIONED against MANUFACTURING, SELLING, or USING any STONE BREAKERS similar to BLAKE'S, which have not been manufactured by the Plaintiffs. Application will forthwith be made to the Court of Chancery for INJUNCTIONS AGAINST ALL PERSONS who may be found INFRINGING BLAKE'S PATENT after this notice.

SOLE MAKER IN ENGLAND,

H. R. MARSDEN, SOHO FOUNDRY, MEADOW LANE, LEEDS.

HEATON'S PATENT.

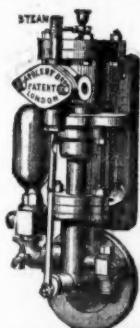
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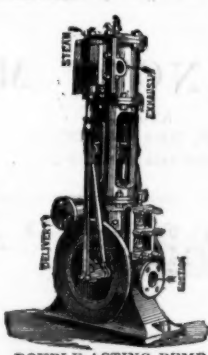
LONDON, S.E.,

Engineers and Patentees of STEAM CRANES, DONKEY PUMPS, &c.

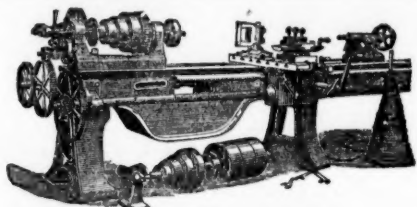
PATENT DONKEY PUMPS.

Nos.	1	2	3	4	5	6	7	8	9
Diam. of ram ..	1½ in.	2 in.	2½ in.	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.
*Gall. per hour ..	230	400	680	860	1200	1500	2100	2500	3800
Approx. H.P.	15	25	40	60	80	95	180	150	230
Single-acting price £10 5s.	£12 10s.	£15	£18	£20	£24	£28	£33	£38	£40
Double-acting do. 11 10s.	14 0s.	17	20	24	28	32	38	43	45
Double-acting pump on base plate ..	27	32	38	43	48	53	58	63	68

* Calculated at 300 strokes per minute.



DOUBLE-ACTING PUMP ON BASE PLATE.



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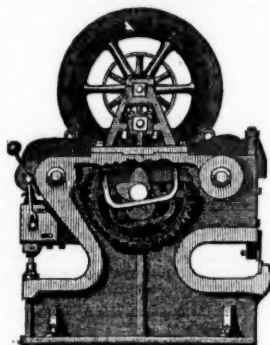
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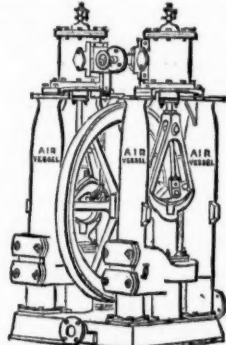
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While COPPER and TIN have been very DEPRESSED IN PRICE during several years past, and, indeed, are subject to frequent fluctuations, LEAD has been comparatively STEADY, and is generally so. In proof of this, it may be stated that while in 1862 only 13 public lead mining companies divided a sum of £70,530, last year (1867) 18 divided £127,290. In the public Share List there appear 47 dividend mines, of which 20 produce lead, and show the following most favourable results:—
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BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
1500	Alderley Edge, c, Cheshire*	10 0 0	—	—	0 7 8	0 5 0	Jan. 1868
200	Botallack, t, c, St. Just	91 5 0	—	—	488 15 0	0 5 0	May 1868
4000	Brookwood, c, Buckfastleigh	1 11 0	—	—	0 10 0	0 2 6	April 1868
1000	Brookfield, t, Cardigan	12 0 0	—	—	9 3 0	0 6 0	Jan. 1868
6400	Cashwell, t, Cumberland*	2 10 0	—	—	0 1 6	0 1 6	Aug. 1868
916	Cargill, s, t, Newlyn	15 5 7	23 1/2	20 22	14 5 0	0 10 0	Jan. 1868
209	Creegbarrow and Penkelt, t	—	—	—	2 5 0	1 5 0	April 1868
128	East Pool, t, c, Pool, Illogan	7 10 0	—	—	427 10 0	0 15 0	April 1868
128	Cwmystwith, t, Cardiganshire	60 0 0	—	—	351 10 0	2 0 0	Dec. 1867
280	Derwent Mines, s, t, Durham	300 0 0	—	—	174 10 0	0 5 0	June 1867
1024	Devon Gt. Consols, c, Tavistock†	1 0 0	—	—	1095 0 0	7 0 0	Mar. 1868
656	Ding Dong, t, Gwylvaeth	49 14 6	—	—	0 10 0	0 7 0	Sept. 1867
328	Dolcoath, c, t, Camborne	128 17 6	—	—	844 10 0	4 0 0	April 1868
6144	East Caradon, c, St. Cleer†	2 14 6	3 1/2	3 1/2	14 11 6	0 4 0	July 1867
300	East Darren, t, Cardiganshire	32 0 0	—	—	154 10 0	2 0 0	April 1868
1906	East Wheal Lovell, t, Wendron	3 0 0	8 1/2	8 1/2	3 11 6	0 10 0	Mar. 1868
2800	Foxdale, t, Isle of Man*	25 0 0	—	—	71 0 0	0 10 0	Sept. 1867
5000	Frank Mills, t, Christow	3 18 6	—	—	3 5 6	0 5 0	Feb. 1868
3560	Gawton, c, Tavistock†	3 10 6	—	—	0 3 0	0 3 0	Jan. 1868
15000	Great Laxey, t, Isle of Man*	4 0 0	17 1/2	16 1/2	8 5 0	0 3 0	Mar. 1868
5508	Great Wheal Vor, t, c, Helston†	40 0 0	19	18 19	12 15 6	0 7 6	Mar. 1868
1024	Herodasfoot, t, near Liskeard†	8 10 0	40	38 40	45 0 0	1 10 0	Feb. 1868
6000	Hingston Down, c, Calstock†	3 10 0	—	—	0 10 0	0 5 0	April 1868
400	Lisburne, t, Cardiganshire	18 15 0	—	—	501 10 0	3 0 0	Mar. 1868
3000	Mace-y-Safn, t, Flint*	20 0 0	28	26 28	3 15 0	0 15 0	April 1868
9000	Marke Valley, c, Cardigan	4 10 6	6 1/2	6 1/2	4 8 6	0 4 0	April 1868
3000	Minera Boundary, t, Wrexham*	1 0 0	—	—	0 13 0	0 3 0	Mar. 1868
1800	Minera Mining Co., t, Wrexham*	25 0 0	175	165 175	228 13 0	5 0 0	Feb. 1868
20000	Mining Co. of Ireland, t, c, t	7 0 0	—	—	0 5 7	0 5 7	Jan. 1867
40000	Mynydd Iron Ore†	2 5 0	—	—	0 8 6	0 2 0	Mar. 1868
10000	Parys Mines, c, Anglesey†	50 0 0	—	—	160 0 0	2 10 0	Mar. 1868
12800	Prince of Wales, t, Calstock†	0 12 6	50s.	2 1/2	0 10 0	0 1 0	Feb. 1868
6000	Prosper United, t, c, St. Hilary†	8 14 0	—	—	0 5 0	0 5 0	Feb. 1867
1120	Providence, t, Uny Lelant†	10 6 7	29	27 28	84 12 6	0 10 0	Feb. 1868
512	South Caradon, c, St. Cleer†	1 5 0	—	390 400	580 10 0	6 0 0	Mar. 1868
6000	South Darren, t, Cardigan	3 6 6	—	—	0 10 0	0 1 6	April 1868
496	So. Wh. Frances, c, Illog†	18 18 9	21	19 21	374 13 6	1 0 0	Mar. 1868
508	Summer Hill, t, Pool, Illogan	3 13 6	—	—	2 5 6	0 5 0	Feb. 1868
6000	Tincroft, t, c, Pool, Illogan	10 0 0	15 1/2	14 1/2	19 6 0	0 5 0	Mar. 1868
2000	Trumpet Cons., t, Helston	11 10 0	—	—	12 10 0	0 10 0	Mar. 1868
3000	W. Chiverton, t, Perranzabuloe†	10 0 0	65 1/2	64 1/2	25 7 6	0 2 0	Feb. 1868
5000	West Goldolphin, t, c, Breage†	0 1 0	—	—	0 2 0	0 2 0	Dec. 1867
400	W. Wheal Seton, c, Camborne†	47 10 0	210	205 210	494 0 0	5 0 0	April 1868
512	Wheal Bassett, c, Illogan†	5 2 6	67 1/2	65 67	631 10 0	1 0 0	April 1868
1024	Wheal Friendship, c, Tavistock†	20 0 0	—	—	300 10 0	0 10 0	Nov. 1867
412	Wheal Killy, t, St. Agnes†	5 6 6	—	—	3 5 0	2 0 0	Feb. 1868
512	Wheal Mary Ann, t, Menheniot†	8 0 0	22	21 1/2	64 5 0	0 17 6	Mar. 1868
80	Wheal Owies, t, St. Just†	70 0 0	—	—	350 13 0	7 10 0	Feb. 1868
396	Wheal Seton, t, c, Camborne	58 10 0	80	74 76	254 15 0	2 0 0	Feb. 1868
1500	Whitehead Lead, Clitheroe*	0 5 0	—	—	1 0 0	0 10 0	Dec. 1867
17000	Wicklow, c, t, Wicklow	2 10 0	—	—	48 16 0	0 6 0	April 1868

FOREIGN DIVIDEND MINES.

25000	Alamillos, t, Spain	2 0 0	2	1 1/2	2	0 2 6	0 1 6	Mar. 1868
20000	Australian, c, South Australia†	7 7 6	—	—	—	0 1 0	0 1 0	Aug. 1867
15000	Cape Copper Mining†	7 0 0	11 1/2	11 1/2	11 1/2	3 2 6	0 10 0	Feb. 1868
7162	Don Pedro North of the Rey†	0 14 0	3	2 1/2	2 1/2	0 15 0	0 5 0	Mar. 1868
7000	English and Australian, c, t	2 10 0	—	—	—	0 1 0	0 1 0	Feb. 1868
20000	Fortuna, t, Spain*	2 0 0	2	1 1/2	1 1/2	1 9 4	0 2 0	Mar. 1868
20000	Gen. Mining Assoc., Nova Scotia†	20 0 0	—	—	—	23 10 0	0 15 0	June 1867
10000	Gonnesa, t, * [5000 £5 pd., 5000 £4 pd.]	1 0 0	—	—	—	10 9 0	0 10 0	Nov. 1867
68000	Kapunda Mining Co., Australia†	1 0 0	—	—	—	0 10 0	0 10 0	Nov. 1867
15000	Linares, t, Spain*	3 0 0	2 1/2	2 1/2	2 1/2	11 1 8	0 3 4	Mar. 1868
5000	Panulicillo, c, Chile†	3 0 0	—	—	—	10 10 0	0 10 0	Yearly
6000	Peel River Land and Mineral†	100 0 0	—	—	—	4 14 0	0 11 0	June 1867
10000	Port Phillip, t, c, France†	20 0 0	1 1/2	1 1/2	1 1/2	1 0 0	0 1 6	Jan. 1868
10000	Port Phillip, t, c, France†	1 0 0	—	—	—	7 1/2	0 10 0	Nov. 1867
20000	Scottish Australian Min. Co., t	1 0 0	—	—	—	81 10 0	4 5 0	Dec. 1867
11000	St. John del Rey, Brazil†	15 0 0	21 1/2	20 21	20 21	1 4 6	0 3 6	Feb. 1868
13500	Vancouver, c, t†	10 0 0	—	—	—	0 9 0	0 1 0	Jan. 1868
50000	Victoria (London) [25000 £1 pd., 25000 12s. 6d. pd.]	1 0 0	—	—	—	0 9 0	0 1 0	Jan. 1868
40000	West Canada Mining Co., *	1 0 0	—	—	—	0 19 6	0 2 6	May 1868

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.				
50000	Anglo-Argentine, s, Argentine Republic*	1 0 0	—	—	0 10 0	Nov. 1866			
100000	Anglo-Brazilian, g, t†	0 10 0	—	—	0 10 0	Jan. 1868			
12500	Anglo-Italian, g, t†	0 10 0	—	—	0 10 0	Mar. 1868			
20000	Australian United, g	1 0 0	—	—	5 0 0	36			
2464	Burra Burra, c, South Australia†	5 0 0	—	—	1 12 0	Aug. 1866			
25000	Capula, s, Mexico†	1 12 0	—	—	5 0 0	3½	2½	Mar. 1868	
30000	Chontales, g, s, Nicaragua†	5 0 0	—	—	45 10 0	—	Jan. 1868		
12000	Cobre Copper Company, c, Cuba†	45 10 0	—	—	16 10 0	—	—		
10000	Copiapu Mining Company, Chile†	16 10 0	—	—	10 0 0	—	April 1866		
10000	Copiapu Smelting, Chile†	10 0 0	—	—	150 27 0	—	Nov. 1866		
300	Cuerral, t, Spain*	1 0 0	—	—	5 0 0	—	Nov. 1866		
15000	El Chico Silver Mining and Reduction Company†	5 0 0	—	—	2 0 0	—	Fully pd.		
40000	Fortune Copper Mining Co. of Western Australia	2 0 0	—	—	1 15 0	3½	1½	June 1867	
50000	Frontino and Bolivia, g, New Granada†	1 15 0	—	—	5 0 0	—	Fully pd.		
10000	Great Barrier Land, Mining, &c., New Zealand	5 0 0	—	—	1 11 6	—	Sept. 1862		
80000	Great Northern, c, South Australia†	1 11 6	—	—	3 0 0	—	—		
7927	Lusitanian (Portugal)†	3 0 0	—	—	6 0 0	—	Feb. 1868		
82640	Mariquita, g, s, New Granada	3 0 0	—	—	6 0 0	—	Dec. 1867		
12500	Norfolk Iron, India†	1 0 0	—	—	6 0 0	4½	—		
51000	New Quebrada, c, Venezuela†	3 10 0	—	—	2 0 0	—	Fully pd.		
16000	Orea, c, New Zealand*	2 0 0	—	—	2 15 0	2½	2½	2½	May 1866
80000	Pestarena United, g, Italy†	2 15 0	—	—	0 14 0	3½	3½	June 1867	
10178	Rhenish Consolidated, [6000 £5 pd., 4178 £2 10s. pd.]	—	—	—	4 0 0	—	Sept. 1866		
100000	Rossa Grande, g, Brazil†	0 14 0	—	—	0 10 0	—	Fully pd.		
15000	San Pedro del Monte, s, Mexico*	4 0 0	—	—	0 5 0	—	Fully pd.		
2000	San Roque, t, Spain*	1 0 0	—	—	0 5 0	—	Fully pd.		
100000	Taquaril, g, Brazil†	2 0 0	—	—	2 0 0	—	Oct. 1867		
6000	Terrescu, s-t, Isle of Saxe†	2 0 0	—	—	28 5 0	2	1½	1½	—
43174	United Mexican, c, Mexico†	28 5 0	—	—	1 2 6	—	—	—	—
30000	Val Antigua, c, Italy*	1 2 6	—	—	7 0 0	—	—	—	—
6000	Val Sassan, s, c, l, Italy†	7 0 0	—	—	1 0 0	—	—	—	—
45000	Victor Emanuel, c, Italy*	1 0 0	—	—	5 0 0	—	—	—	—
30000	Waco, g, New Zealand†	5 0 0	—	—	1 0 0	—	—	—	—
50000	Worthing, c, South Australia†	1 0 0	—	—	1 0 0	—	—	—	—
75000	Yorke Peninsula, c, South Australia†	1 0 0	—	—	3 0 0	2½	2 2½	—	—
45000	Yudanamatana, c, South Australia†	3 0 0	—	—	—	—	—	—	—